This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

2Soc 1816,3

HARVARD COLLEGE
LIBRARY

IN MEMORY OF
FRANKLIN TEMPLE INGRAHAM
CLASS OF 1914

SECOND LIEUTENANT
COAST ARTILLERY CORPS
UNITED STATES ARMY

WELLESLEY, MASSACHUSETTS
MAY 23.1891 APRIL 11.1918

TIFFANY & CO.

July 20

LEEDS

Philosophical and Literary Society.

THE ANNUAL REPORT

For 1890-91.

Se Le 1

THE

SEVENTY-FIRST REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION, 1890-91.

READ AT THE ANNUAL MEETING, MAY 5th, 1891.

Leeds:
PRINTED BY McCORQUODALE & CO. LIMITED.
1891.

1617 18/4
LSoc1816.3
HARVARD COLLEGE LIBRARY
INGRAHAM FUND
JUN 10 1942

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SEVENTY-FIRST SESSION.

The most memorable of the local scientific events of the year was the meeting in Leeds, for the second time, of the British Association for the Advancement of Science. The Council of the Philosophical and Literary Society, which joined in the invitation to the Association, had much pleasure in placing its rooms at the disposal of the Local Committee for the preliminary business meetings, and in giving the use of their Hall and Library for the use of Section B (Chemistry) during the Association week. The Council were pleased to receive the assurance that the arrangements then made had been highly appreciated, and they have to acknowledge with thanks the consideration of the Local Executive Committee in voting that the balance remaining in their hands after paying the expenses of the meeting should be handed to this Society. The amount thus received was £21 0s. 5d.

Another satisfactory circumstance is the gradual diminution of the debt originally incurred by the installation of the electric light for Lecture Hall purposes in 1886. This debt, which at the date of the Annual Meeting in 1888 amounted to £469, has been reduced in the three succeeding years to the respective amounts of £227, £169, and (at the present time) £87. It is gratifying to observe that in the last two years this result has been produced without resort to any

unusual methods of increasing the income of the year, but rather by curtailing expenses so far as could be done without diminishing the efficiency of the various departments of the Society's work.

In this connection the Council have to acknowledge with gratitude the help which has been given by the gentlemen who have generously given their lectures to the Society. During the Session just ended the Council have had to thank the following for such favours: Sir Henry Doulton, Prof. Stroud, Mr. Douglas Freshfield, the Bishop of Ripon, Bishop Barry, the President of the Society (Mr. T. Pridgin Teale), Mr. Common, and Prof. Thorpe.

The Lecture Session was of more than average interest and importance, and the General Meetings of the Society were well attended. The Syllabus of Lectures was as follows:—

1. "Some Modern Developments of English Pottery," illustrated by a valuable collection of artistic pottery, and by practical demonstrations of the artist's skill with the Potter's Wheel. By Sir Henry Doulton, on the *21st Oct.*, 1890.

2. "The effect produced by the Musical Revolution of 1600 upon Choral Music," with vocal illustrations by a select choir, kindly prepared for the occasion by Mr. Alfred Broughton, of Leeds. By C. H. H. Parry, Mus. Doc. *Nov. 4th*, 1890.

3. "Range-finders, Past and Present," with an exhibition of various instruments. By Prof. W. Stroud, D.Sc. *Nov. 18th*, 1890.

4. "The Caucasus," with lantern illustrations. By W. Douglas Freshfield, M.A., F.R.G.S. *Dec. 2nd*, 1890.

5. "The Great Seals of England and their History," with lantern and other illustrations. By Allan Wyon, F.S.A. *Dec. 16th*, 1890.

6. "Iceland," By Prof. James Bryce, D.C.L., M.P. *Jan. 20th*, 1891.

7. "The Mediæval Monastery as the Home of Art and Culture," with lantern illustrations. By Prof. G. Baldwin Brown, M.A. *Feb. 3rd*, 1891.

8. "Leaves from the Book of the Great Decease; the last days of Gotama." By the Lord Bishop of Ripon. *Feb. 10th*, 1891.

9. "Law and Liberty; a Present Day Problem." By Bishop Barry, D.D. *Feb. 24th*, 1891.

10. "Dust and Fresh Air: how to keep out the one and let in the other," with lantern and other illustrations. By the President (T. Pridgin Teale, M.A., F.R.S.). *March 3rd*, 1891.

11. "Recent Astronomical Work," with lantern illustrations and exhibition of astronomical instruments. By A. A. Common, F.R.S. *March 17th*, 1891.

12. "Some Recent Contributions to Terrestrial Magnetism," with illustrations by the lantern and scientific instruments. By Prof. T. E. Thorpe, Ph.D., F.R.S. *April 7th*, 1891.

In addition to the regular lectures, the Society was favoured with an address on the Greek inscriptions in its Museum, by the Rev. Canon Hicks, M.A., on Saturday afternoon, December 13th, 1890. The address was replete with information given in a very attractive way, and was calculated to arouse an intelligent interest in the monuments possessed by the Society as well as in the subject of epigraphy in general.

The chief drawback to an otherwise gratifying survey of the year is a decrease in the number of our Members and Subscribers, the following being a comparison with the previous year, viz.:—

	1890.	1891
Original Proprietary Members (78 shares) ...	70	70
New Proprietary Members (121 shares) ...	94	94
Ordinary Members	2	2
New Ordinary Members	77	78
Annual Subscribers of £1 1s.	163	137
Annual Subscribers of 7s. 6d.	168	143
Total	574	524

The most extensive work undertaken in the Museum during the past year has been the cleaning and re-labelling of the entire collection displayed in the Large Zoological Room. A series of small maps has been coloured to show the distribution of each family of the Mammalia. Two upright cases in this room have been appropriated for a collection of the smaller British Mammals.

The Birds have also received considerable attention. A new series has been added to illustrate the differences in plumage consequent on sex, and another to exhibit some typical examples of the change in plumage which birds undergo at different seasons of the year. It was mentioned in the last Annual Report that Mr. Waite had presented a number of British Birds' Nests to the Museum. So many additions have been made during the past year that it has become necessary to have a new case made for their reception. This has been placed, together with the previously existing one, in the Gallery of the Ornithological Room.

The British Marine Shells have been entirely remounted. Each species is now placed in a separate glass-covered box, in which form the land and fresh-water types are also displayed. In addition to the Marine Shells possessed by the Society, the Conchological Society has deposited a fine series, which adds much to the value of the collection.

The collection of Insects displayed in the South Room has been almost completed, and it is hoped that the two remaining cases, one to illustrate Insect Constructions, and the other Transformations of Insects, will be dealt with during the present year. The Economic Collection of Insects has been

enriched, and 20 very instructive cases are now exhibited. The large series of British and Foreign Galls, presented some years ago by the late Mr. Wilson Armistead, has been remounted, and is now displayed in three large cases among the Insect collections.

The rearing of Lepidoptera, which has been carried on for some years past, and which receives considerable attention from visitors, was exhibited once more last season when no less than 25 species were shown, a larger number than has ever been reared before.

In two table cases in the Large Zoological Room a new series is exhibited, to illustrate the methods of attack and defence practised by animals.

The cataloguing of the contents of the Museum has again been taken in hand, and considerable progress has been made. The principal work done in this department during the past year has been the cataloguing of the entire Ethnological Collections. The fossils are now receiving attention.

The most important donation to the Museum during the year has been a Roman Altar, which was dredged up in 1890 at Woodnook, near Castleford, and presented by the Aire and Calder Navigation Company. This interesting local antiquity has been placed in a case in the vestibule of the Hall. The inscription, which is rather defaced in the bottom line, reads as follows:—

DEAE · VIC
TORIAE ·
BRIGANT ·
A · D · AURS
FA[?]ORIANU

The Greek inscriptions presented many years ago by the Very Rev. John Gott, now Dean of Worcester, and formerly Vicar of Leeds, have been re-described by the Rev. Canon Hicks, of Manchester, in the Journal of Hellenic Studies, Vol. XI. (1890). Seven hundred and fifty copies of this important memoir, which is illustrated by a photograph and woodcuts, have been purchased from the publishers for the use of the Society.

The number of visitors to the Museum during the year was 28,636, being an increase of 1,339 over the previous year.

Last May an interesting collection of Postage Stamps, to commemorate the Jubilee of Penny Postage in England, was made by Messrs. Roebuck, Skipwith, and others, and was exhibited for a fortnight in the Society's Museum. The Exhibition was in every way successful, and reflected great credit on the gentlemen who organised it.

With deep regret the Council have to record the loss of an esteemed friend and colleague by the death of Mr. Charles Pebody. Mr. Pebody early adopted literature as his profession, and attained great skill as a reporter. Developing his interest in journalism he occupied the post of editor to various daily newspapers, notably at Exeter and Bristol, removing from the last-named city to Leeds in 1882 to assume the editorship of the "Yorkshire Post," which had been vacated by the late Mr. J. Ralph. Mr. Pebody had much flexibility of style, vivacious humour, and excellent business capacity. His knowledge of public men was very extensive, and he was able on various occasions materially to serve the Leeds Philosophical and Literary Society by using his influence to obtain lectures which without it could hardly have been secured. He pub-

lished "English Journalism, and the Men who have made it," and "Authors at Work," besides writing extensively for magazines. Mr. Pebody died October 30th, 1890, after an illness which commenced suddenly about two months previously. Aged 51 years.

From the list of Honorary Members of the Society two names have been lost by death during the year, viz.: those of the Archbishop of York and Dr. H. B. Brady, F.R.S., &c.

The Archbishop of York (the Right Hon. and Most Reverend William Thomson, D.D., Primate of England) was born at Whitehaven in 1819, and educated at Shrewsbury School, proceeding at the age of seventeen years to Queen's College, Oxford, in due course becoming a Scholar and Fellow. He was ordained in 1842, but after a few years of parochial work returned to his College, where he successively filled the offices of Dean, Bursar, and Provost. Dr. Thomson's influence was cast in favour of the movement, culminating in the University Reform Act of 1854, and he earnestly supported the liberalising changes in the constitution of Queen's College, which were one of the consequences of this alteration of the law. Through the successive steps of the Preachership of Lincoln's Inn and the short tenure of ten months of the Bishopric of Gloucester and Bristol, Dr. Thomson reached at the early age of 43 the Archbishopric of York, and he held this commanding position for no less than 28 years. Dr. Thomson was a deep thinker and had the advantage over men of narrower training in possessing a broad scientific knowledge. He was a Fellow of the Royal Society, of the Chemical Society, of the Royal Geographical Society, and other learned bodies.

His Grace conferred upon the Leeds Philosophical and Literary Society the favour of delivering the Inaugural Address of the Session of 1877-8, when a very large audience gathered in the Victoria Hall, which had been specially secured for the occasion. The address was subsequently published by the Society, its title being "The Worth of Life." The pessimist doctrines propounded by Schopenhauer and others were combatted in the address with masterly skill. It was upon the same day as that upon which the Archbishop delivered this address that he laid the foundation-stone of the buildings of the Yorkshire College. The question of a new University for the north of England was then pending, and his Grace gave expression to his desire for such a federation of Colleges as was afterwards adopted as the basis of the Victoria University. The Archbishop was created a Member of the Court of the University by nomination in its Charter. He died at the Palace, Bishopthorpe, December 25th, 1890, aged 71 years.

Henry Bowman Brady, LL.D., F.R.S., F.L.S., &c., was the second son of a surgeon at Gateshead-upon-Tyne. He became associated with Leeds in 1850, when he was articled as a pupil to the late Mr. Thomas Harvey, pharmaceutical chemist. He brought from Newcastle-upon-Tyne a strong bias for natural history, derived from such naturalists as Alder, Albany, John Hancock, and others, and found youthful associates in Leeds having similar tastes. Photography was in its infancy at that time, and presented great attractions to these young students, who achieved much success in the new art. In 1855 Mr. Brady entered upon business as a pharmaceutical chemist at Newcastle, and continued this for twenty-one years, devoting much time, however, to the service of the Pharmaceutical

Society, both as an Examiner and Member of Council. He was the first Treasurer, and for two years President of the British Pharmaceutical Conference. Mr. Brady selected Foraminifera as his special branch of natural history, and published various monographs on Carboniferous and Permian Foraminifera, and on Parkeria and Loftusia. His *magnum opus* was the Report on Foraminifera, forming Part xxii. of the Zoological Series of Reports on the Scientific Results of the Voyage of H.M.S. *Challenger*. The illustrations of this and his other works owed much to the personal skill as a draughtsman possessed by the author. Mr. Brady devoted the leisure of the last fifteen years to the pursuits of natural history, and to extensive travel. Although his health was so delicate that he rarely ventured to winter in England, his energy was marvellous, and he visited Morocco, the United States, China, Japan, India, Borneo, and various Pacific Islands. He gave to the Leeds Philosophical and Literary Society, in its Session 1878-9, the results of his visit to Morocco, in a paper entitled "Morocco and the Moors." In 1888, the University of Aberdeen conferred upon Mr. Brady the honorary degree of LL.D., and in the same year he was placed upon the Council of the Royal Society. He died at Bournemouth, January 10th, 1891, aged 56 years.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1890.

1890.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	42·3	29·649	3·28	3·15
February	38·6	30·078	·69	·93
March	43·9	29·600	1·66	1·87
April	43·6	29·661	·85	1·04
May	53·8	29·694	2·62	2·50
June	56·9	29·771	1·55	2·65
July...	57·8	29·682	2·94	2·12
August	56·7	29·668	3·94	4·18
September	59·0	29·926	1·69	1·91
October	50·0	29·856	·70	·83
November	42·6	29·678	2·31	2·82
December	33·2	29·905	·79	1·12

Mean monthly temperature—48·2.

Mean monthly height of the barometer—29·764 inches.

Total rainfall for the year—Museum 23·02 inches; Woodhouse Cliff 25·12 inches. Average rainfall at the Museum for the ten years 1881-1890—24·58 inches.

Greatest degree of heat, indicated by the thermometer in the shade—79° on September 8th; minimum—18° on December 22nd.

Greatest barometric pressure—30·588 inches on February 23rd, the temperature of the mercury being 47°; least pressure—28·518 inches on January 23rd, the temperature of the mercury being 56°.

Greatest fall of rain (during 24 hours)—·90 inches on August 11th.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain gauge above the street, 46 feet.

SUNSHINE AT LEEDS IN 1890.

The observations were made by Jordan's Photographic Sunshine Recorder, at the following stations:—

1. The Museum, situate in the centre of the town; elevation above the sea, 137 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the town; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the town; elevation, 475 feet; on the fringe of the borough.
4. Union Infirmary, Burmantofts, 1 mile from the centre of the town; elevation, 200 feet; industrial district.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible duration.
JANUARY	1	17·0	6·6
	2	29·6	11·4
	3	37·1	14·3
	4	26·8	10·3
FEBRUARY	1	13·4	4·8
	2	25·0	9·0
	3	37·6	13·5
	4	30·7	11·0
MARCH..	1	64·4	17·6
	2	87·0	23·7
	3	93·2	25·4
	4	90·9	24·8
APRIL	1	77·7	18·7
	2	116·9	28·2
	3	135·0	32·7
	4	118·7	28·6
MAY	1	147·6	30·6
	2	170·3	37·2
	3	188·4	39·1
	4	180·2	37·4
JUNE	1	74·2	15·0
	2	100·9	20·4
	3	96·8	19·6
	4	109·1	22·0
JULY	1	116·8	25·1
	2	154·4	31·1
	3	156·2	31·4
	4	139·2	28·0
AUGUST	1	125·9	28·0
	2	159·1	35·4
	3	163·6	36·5
	4	146·7	32·7
SEPTEMBER	1	107·3	28·5
	2	132·8	35·2
	3	148·7	39·5
	4	129·5	34·4
OCTOBER	1	75·0	22·8
	2	98·7	30·0
	3	113·2	34·4
	4	100·5	30·6
NOVEMBER	1	30·1	11·4
	2	41·0	15·5
	3	51·3	19·4
	4	34·5	13·0
DECEMBER	1	1·7	0·6
	2	4·1	1·7
	3	8·2	3·4
	4	3·2	1·3

SUMMARY FOR THE YEAR.

Museum	19·1	per cent. of possible duration.
Woodhouse Cliff ..	25·3	,, ,, ,,
Lawnswood	27·6	,, ,, ,,
Burmantofts	25·6	,, ,, ,,
	24·4	per cent. mean for 1890.
	20·7	,, ,, 1889.
	19·9	,, ,, 1888.
	28·0	,, ,, 1887.

The Meteorological Office publishes the following records of Sunshine in 1890, as observed at stations taken as representing specified districts:—

	Percentage of possible duration.	Difference from mean.
Scotland, N. (Stornoway)	23	—4
,, E. (Aberdeen, Braemar, Marchmont)	28	—4
,, W. (Glasgow, Douglas, Isle of Man)	29	—1
England, N.E. (Durham, York)	28	—1
,, N.W. (Penrith, Stonyhurst, Blackpool, Llandudno)	28	—2
,, Mid. (Bawtry, Leicester, Oxford, &c.)	31	0
,, S. (London, Hastings, Southampton, &c.)	33	0
,, E. (Hillington, Geldestone, Ingatestone)	35	0
,, S.W. (Pembroke, Falmouth, Plymouth, &c.) ..	34	—2
Ireland, N. (Armagh, Markree Castle)	28	0
,, S. (Dublin, Parsonstown, Valencia)	31	—2
Channel Islands (Jersey)	41	—2

SUMMARY.

30·7	per cent. mean for United Kingdom,	1890.
29·2	,, ,, ,,	1889.
27·5	,, ,, ,,	1888.
35·6	,, ,, ,,	1887.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the Year 1890-91.

RECEIPTS.

	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1890		—		0	8	7
,, Annual Subscriptions, viz.:—						
80 New Proprietary Members, at 21s. ...	84	0	0			
1 Original Ordinary do. 42s. ...	2	2	0			
65 New Ordinary do. 21s. ...	68	5	0			
130 Annual Subscribers, at 21s. ...	136	10	0			
144 Annual Subscribers, at 7s. 6d. ...	54	0	0			
,, Arrears	11	11	0			
				356	8	0
,, Rent, viz.:—						
Cellars	40	0	0			
Lecture Room	208	6	6			
				248	6	6
,, Receipts from Visitors to Museum				119	6	4
,, Sale of Guides	4	2	0			
,, Sundries	3	4	3			
				7	6	3
,, Donation British Association Local Committee ...				21	0	5
,, Balance Due to Bank...				87	7	4
				£840	3	5

PAYMENTS.

	£	s.	d.	£	s.	d.
By Balance Due to Bank, May 1st, 1890 ...		—		168	12	3
,, Repairs and Alterations	23	15	4			
,, Rates and Taxes	4	8	8			
,, Fire Insurance...	13	15	0			
,, Coals, &c.	32	14	11			
,, Gas	21	19	6			
,, Cleaning	5	16	9			
				102	10	2
,, Salaries...	308	0	0			
,, Fee to Auditor...	2	2	0			
				310	2	0
,, Collections, viz.:—						
Archæological	4	14	6			
Zoological	43	5	5			
Library	22	19	10			
Scientific Apparatus	13	7	10			
				84	7	7
,, Postages	8	0	2			
,, Advertising and Printing	38	15	9			
,, Lectures	80	2	6			
,, Interest and Bank Commission	8	13	0			
,, Sundries	15	4	9			
				150	16	2
,, Electric Lighting	...		...	22	9	4
,, Balance in Hand	...		...	1	5	11
				£840	3	5

I have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 23rd, 1891.

CHAS. BEEVERS,
CHARTERED ACCOUNTANT.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1890-91.

ZOOLOGY.

Long-eared Bat	Mr. J. J. Brigg, Keighley.
Merlin	Dr. J. E. Eddison.
Albatross	Mr. John Harrison, Leeds.
Egg of Currasow	Miss Nussey, Roundhay.
Nests of British Birds	Mr. Edgar R. Waite.
Ditto	Mr. Riley Fortune, Harrogate.
Nest of Oven Bird	Mr. Thos. Bunker, Goole.
Jaws of Shark	Mr. J. E. Glover, Leeds.
Marine Shells	Mr. J. W. Dixon, Leeds.
Living Pupæ of T. prometheus	Mr. James Pickles, Leeds.
Nest of Wasp	Mrs. J. E. Eddison.

GEOLOGY.

Oolitic Brachiopoda	Mr. J. F. Walker, M.A., F.G.S., York.

ARCHÆOLOGY AND ETHNOLOGY, &c.

Roman Altar dredged at Woodnook, near Castleford	Aire and Calder Navigation Co.
Roman Altar	Rev. R. R. Kirby.
Indian Chegal (Water-skin)	Mr. T. S. Kennedy, Wetherby.
French Passport, 1835	Mr. J. D. Bell, Leeds.

PUBLICATIONS.

Catalogue of Fossil Reptilia and Amphibia, Part IV. ..... Catalogue of Birds, Vols. XIII., XV., and XVIII..... Guide to Galleries of Geology and Palæontology, Parts I. and II. ... Catalogue of Fossil Fishes, Part II. Catalogue of Fossil Cephalopoda, Part II. ..... Catalogue of Lizards, Vol. III.	British Museum.
Guide to the Natural History Department, Science and Art Museum, Dublin. No. 1, Vertebrate Animals	The Department.
British Fossil Vertebrata, by A. S. Woodward, F. G. S., and C. D. Sherborn, F.G.S. Supplement for 1890	Purchased.
Note on a Fossil Fish (Cottus fasciatus) and Marine Worm (Nereis sp.) from Ottawa, by Sir Wm. Dawson, LL.D., F.R.S.	The Author.
Bibliography of the Muskhogean and Iroquoian Languages, by James C. Pilling ..... Problem of the Mounds, and the Circular, Square, and Octagonal Earthworks of Ohio, by Cyrus Thomas ..... Textile Fabrics of Ancient Peru, by Wm. H. Holmes	Smithsonian Institution.
List of Plants in the Sheffield Public Museum	The Museum.
"Wattles and Wattle-Barks," by J. H. Maiden, F.L.S., F.C.S.	Department of Public Instruction, N.S.W.
Two Beverley Churches, by William Stephenson, M.R.C.S., and John Bilson, A.R.I.B.A.....	The Authors.

Description of Four New Species of Terrestrial Mollusca from S. Africa, by J. C. Mellvill, M.A., F.L.S., and John Hy. Ponsonby, F.Z.S.	The Authors.
Dictionary of the Language of the Micmac Indians, by Rev. Silas T. Rand, D.D., LL.D.	
Handbook for Leeds and Airedale British Association Meeting, 1890	The Local Committee.
Fauna der Gaskohle, by Dr. A. Fritsch, Band III., Heft. I.	Purchased.
Decimal Coinage, &c., by Sir G. Molesworth, K.C.I.E.....	Decimal Association.
The Great Trigonometrical Survey of India, Vols. XI., XII., and XIII.	Secretary of State in Council of India.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-WEEKLY.

Atti della R. Accademia dei Lincei...	The Academy.
Bollettino delle Publicationi Italiane, 1890-91	The Compiler.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	Purchased.
Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society.....	The Society.
Proceedings of the Zoological Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.
Journal of the Royal Historical and Archæological Association of Ireland	The Association.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie.....	Purchased.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions	Purchased.
Proceedings of the Royal Society ...	The Society.
Proceedings of the Royal Society of Edinburgh, Vols. XV., 1887-8, and XVI., 1888-9 .... Transactions do. do. Vol. XXXV., Parts III., 1887-8, and IV., 1889-90	The Society.
Proceedings of the Royal Institution of Great Britain, Vol. XIII., Part I., 1891	The Institution.
Transactions of the Royal Irish Academy, Vol. XXIX., Parts XIII., XIV., and XV., 1890-91 ..... Proceedings do. do. Vol. I., Nos. III. and IV., 1890-91 Royal Irish Academy, "Cunningham Memoirs," No. V., "The Red Stars"	The Academy.
Scientific Proceedings of the Royal Dublin Society, Vol. VI., Parts VII., VIII., and IX., 1889-90 ..... Scientific Transactions do.	The Society.

Journal and Proceedings of the Royal Society of New South Wales, Vols. XXIII., Part II., 1889, and XXIV., Part I., 1890	The Society.
Publications of the Royal Swedish Academy of Sciences	The Academy.
Papers of the Royal University of Norway	The University.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger, Heft III., 1889, and I. & II., 1890	Royal Danish Society of Sciences.
Papers and Proceedings of the Royal Society of Tasmania, 1889	The Society.
Proceedings and Transactions of the Royal Society of Canada, Vol. VII., 1889	The Society.
Proceedings of the Royal Society of Queensland	The Society.
Annual Report of the Royal Cornwall Polytechnic Society, 1889.....	The Society.
Journal and Annual Report of the Royal Institution of Cornwall	The Institution.
Bulletin Société Impériale, Moscow...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deutschen Akademie der Naturforscher, 1889-90	The Academy.
British Association Report, 1889.....	The Association.
Australasian Association Report, Vol. II., 1890	The Association.
Report of the Smithsonian Institution, parts I. and II., 1887	The Institution.
Smithsonian Miscellaneous Collections	
Smithsonian Contributions, Vol. XXVI., 1890	
Fifth and Sixth Annual Reports of the Bureau of Ethnology, 1883-4, and 1884-5	

Transactions of the Academy of Science of St. Louis	The Academy.
Transactions and Proceedings of the New Zealand Institute, Vol. XXII., 1889.....	The Institute.
Annual Report, Middlesex Hospital, 1889.....	The Hospital.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science, 1889	The Union.
Victorian Year-Book, 1889-90, Vol. I. and II. By Henry Heylyn Hayter, C.M.G.....	The Author.
Bulletin of the Essex Institute, U.S.A.	The Institute.
Proceedings of the Birmingham Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society	The Society.
Proceedings of the Glasgow Philosophical Society, Vol. XXI., 1889-90	The Society.
Transactions of the American Philosophical Society, Vol. XVI., Part III., 1890..... Proceedings do. Vols. XXVII. and XXVIII., 1889-90	The Society.
Report of the Halifax Literary and Philosophical Society, 1890	The Society.
Transactions of the Leicester Literary and Philosophical Society, Vol. II., Parts III.—VI.	The Society.
Report of the Committee of Leicester Town Museum, 1886-90	The Museum.
Annual Report of the Birkenhead Literary and Scientific Society, 1889-90	The Society.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society, 4th Series, Vols. III. and IV. (Parts I., II., and III.), 1890-91	The Society.

Proceedings of the Liverpool Literary and Philosophical Society.....	The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association, 1889-90	The Association.
Annual Report of the Sheffield Literary and Philosophical Society, 1889.....	The Society.
Annual Report and Transactions of the Hull Literary and Philosophical Society, 1889-90.....	The Society.
Report of the President of Yale University, 1891.....	The University.
Proceedings of the Canadian Institute, Vol. VII., Part II., 1888-9.....	The Institute.
Annual Report do. 1889	
Transactions do. Vol. I., Part I., 1889-90	
Proceedings and Transactions of the Nova Scotian Institute of Natural Science.....	The Institute.
Proceedings of the Academy of Natural Sciences of Philadelphia, Parts III., 1889, and I., II., and III., 1890.....	The Academy.
Proceedings of the American Academy of Arts and Sciences, New Series, Vol. XVI., 1889	The Academy.
Annual Report of the Chester Society of Natural Science and Literature, 1889-90	The Society.
Transactions of the Wisconsin Academy of Sciences, Arts, and Letters, Vol. VII., 1883-7	The Academy.
Memoirs of the National Academy of Sciences, Washington, Vol. IV., Part II., 1889	The Academy.
Proceedings of the Davenport Academy of Natural Science	The Academy.

Transactions of the Wagner Free Institute of Science, Philadelphia, Vol. III., 1890	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba, 1889	The Society.
Memoires de la Société d'émulation d'Abbeville, 1886-7	The Society.
Journal of the Elisha Mitchell Scientific Society, Vol. VII., Parts I. and II., 1890	The Society.
Memorias de la Sociedad Científica (Mexico), Tomo III., Num 9 and 10, 11 and 12, 1890	The Society.
Greenwich Observations, 1888	The Astronomer-Royal.
Transactions of the Astronomical Observatory of Yale University...	The University.
Annual Report do. 1889-90	
Catalogue do. 1890-91	
Memoirs of the Royal Astronomical Society, Vol. XLIX., Part II., 1887-9	The Society.
Annuario del Observations Astronomico Nacional, Mexico, 1890 ...	The Astronomer.
Cape Meridian Observations, 1882-4	Cape Astronomer-Royal.
Catalogue of the Crawford Library of the Royal Observatory, Edinburgh, 1890	The Observer.
Radcliffe Astronomical and Meteorological Observations, Vol. XLIV., 1886	Radcliffe Trustees.
Journal of the British Astronomical Association, Vol. I., No. 1, 1890 ...	The Association.
Symons's British Rainfall, 1889	Purchased.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Geologists' Association, Vol. XI., Parts VI., VII. and VIII., 1890	The Association.

Journal of the Royal Geological Society of Ireland.....	The Society.
Proceedings of the Liverpool Geological Society, Vol. VI., Part II., 1889-90	The Society.
Journal of the Liverpool Geological Association, Vol. VIII., 1889	The Association.
Transactions of the Manchester Geological Society, Vol. XXI., 1890-91	The Society.
Transactions of the Leeds Geological Association, Part V., 1889.....	The Association.
Transactions of the Edinburgh Geological Society, Vol. VI., Parts I. and II., 1890	The Society.
Records of the Geological Survey of N.S.W., Vol. I., Part III., 1889, and Vol. II., Parts I. and II., 1890..... Memoirs of the Geological Survey of N.S.W., Palæontology, Nos. 3, 4, 7, and 8, 1890.....	The Surveyor.
Annual Report and Papers of the Department of Mines, N.S.W., 1889	The Department.
United States Geological Survey, 8th and 9th Annual Reports, 1886-7, and 1887-8	The Department.
Geological and Natural History Survey of Canada ..... Annual Report and Papers—do.	Department of the Interior.
Geological Record	Purchased.
Transactions and Proceedings of the Royal Geographical Society of Australasia (N.S.W. Branch)	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1889-90	The Club.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne, Vols. IX. and X., 1889-90.....	The Tyneside Naturalists' Field Club.

Proceedings of the Berwickshire Naturalists' Club	The Club.
Proceedings of the Boston Society of Natural History, U. S. A., Vol. XXIV., Parts III. and IV., 1889-90 Memoirs do. Vol. IV., Nos. 7, 8, and 9, 1890.....	The Society.
Bulletin of United States National Museum, No. 38..... Proceedings do. Vol. XII., 1889...	The Museum.
Records of the Australian Museum, Vol. I., Nos. 3-5, 1890 ..... Report of the Trustees of the Australian Museum, 1889	The Trustees.
Report of the Manchester Museum, Owens College, 1st Report, 1889-90	The Curator.
Prodromus of the Zoology of Victoria, Decade 20, 1890.....	The Editor.
Publications of the Ray Society	Purchased.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College, 1889-90.....	The College.
Annual Report of Harvard College, 1889-90	The College.
Harvard University Catalogue, 1890-91	The University.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien...	The Society.
Report of Associated Architectural Societies, Vol. XX., Part I., 1889, and Index, Vols. XV.-XIX.....	The Society.
Report of the Muséum National, Rio-de-Janeiro, 1889 ..... Archivos ditto, Vol. VII., 1887.....	Directeur Général.

LIST OF OFFICERS AND COUNCIL,

1891-92.

OFFICERS.

PRESIDENT	T. PRIDGIN TEALE, M.A., F.R.S.
VICE-PRESIDENTS . .	REV. J. H. D. MATTHEWS, M.A. REV. CHAS. HARGROVE, M.A.
HONORARY SECRETARIES .	SYDNEY LUPTON, M.A. ARTHUR SMITHELLS, B.Sc.
TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	T. PRIDGIN TEALE, M.A., F.R.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. J. A. NUNNELEY, M.B.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. CHAS. HARGROVE, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	RICHARD REYNOLDS, F.I.C.
WM. WOODHAM BEST, M.A.	THOMAS SCATTERGOOD.
NATHAN BODINGTON, M.A.	J. H. WICKSTEED, M.Inst.C.E.
T. WALTER HARDING.	J. J. WILLSON
THOMAS MARSHALL, M.A.	EDMUND WILSON.

General Curator . .	LOUIS C. MIALL, F.L.S., F.G.S.
Secretary . . .	W. F. HUSBAND, LL.B.
Sub-Curator. . .	EDGAR R. WAITE, F.L.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1891-92.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	*Aldam, Wm.	
3	Armitage, Robert	Farnley.
4	Arthington, Robert	Headingley.
5	Baines, Herbert S.	Cawood, Apperley Bridge.
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	22, Sholebroke Avenue.
11	*Brown, James	
31, 62	Brown, S. J. (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
26	*Ellershaw, John	
28	Empson, Christopher	Beechwood, Sowerby Bridge.
29, 48	Ford, J. R. (2 shares)	Quarry Dene, Weetwood.
33	Goodman, Benjamin	Gledhow House.

34, 35	Gott, Very Rev. John, D.D. (2 shares) .	The Deanery, Worcester.
36-8	Gott, Wm. Henry (3 shares)	Armley House.
61	Greenhow, Wm. T. .	Newton Cottage, Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
39	Harding, T. R. .	St. Ann's Tower, Headingley.
64	Harding, Thomas Walter	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Avenue House, Woodhouse Lane.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	Claremont, Leeds.
30	Horsfall, J., M.A., F.R.C.S.	Merivale Lodge, Meyrick Road, Bournemouth, E.
47	Ingham, Constantine .	5, Blenheim Terrace.
49	Jowitt, Mrs. John .	Harehills, Potternewton.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	Beech Holme, Burley, Leeds.
32	Lupton, Edward Basil .	Moorlands, Headingley.
57	Lupton, Mrs. F. .	Beechwood, Roundhay.
53	Lupton, Francis M., M.A.	Wellington Street.
56	Lupton, Sydney, M.A. .	Grove Cottage, Roundhay.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S.	13, Belsize Avenue, London, N.W.
65	*Marshall, J. G. .	
60	Marshall, John, M.A. .	Derwent Island, Keswick.
66	Marshall, Reginald Dykes	The Cottage, Keswick.
67	Marshall, V. A. E., B.A.	Monk Coniston, Ambleside.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.

71	Tatham, George .	Springfield Mount.
52	Taylor, Benjamin .	20, Moorland Road.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	The Grange, Bedale.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
17	Walker, Reginald Thomas	27, Hanover Square.
76	*Ward, William Sykes .	
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	Denison Hall.
27	Wood, Robert Henry .	15, Bainbrigge Road, Headingley.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S.	16, Blenheim Terrace.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	31, Park Row.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
10	Bowling, John .	3, Cavendish Road.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, nr. Knaresborough.
5, 6	Brown, G. W. (2 shares) .	Heathfield, Ilkley.
89	Buckton, Joshua .	Meanwood.
1	Burrell, Benjamin A. .	5, Mount Preston.
86	Carter, J. B. .	Elm House, Potternewton.
9	*Chadwick, William .	

14	Conyers, W. H.	The Hills, Ilkley.
45	Craven, John	3, Beech Grove Terrace.
98	Craven, Joseph	1, Beech Grove Terrace.
104	Crawford, John William	Newton Lane.
26	Dawson, Thomas	Caledonian House, Caledonian Rd.
19	Fairbairn, Sir Andrew	Askham Richard, near York.
118	Flitch, John R.	Chapel-Allerton.
52	Fraser, Mrs. James B.	Claremont, Horsforth.
102-3, 106-10, 114-15	Gott, Wm. Henry (P) (9 shares)	Armley House.
22	Hargrave, Charles	St. Agnesgate House, Ripon.
23	*Hargrave, James	
7	Hargrove, Rev. C., M.A.	De Grey Terrace.
16	Harvey, William	Spring Bank, Headingley.
81	Hatch, S. C.	Clyde House, Westcombe Park Road, Blackheath, London.
44	Hepper, Mrs. J. H.	Suffolk Lodge, Harrogate.
51	Hoggard, Alfred	25, Cavendish Road.
36	*Hudson, Henry	
120	Ingham, Samuel	Headingley Hall.
96	Jepson, Edward George	20, Springfield Mount.
39	Jowitt, Robert Benson	Elmhurst, Harehills, Leeds.
40	Joy, Alfred Lomas	Weetwood Mount, Leeds.
43	*Kitson, James	
46	Kitson, J. Hawthorn	Elmete Hall, Roundhay.
47	Kitson, Sir James, Bart.	Gledhow Hall.
48	Kitson, Mrs. F. W.	Burley Hill, Leeds.
90	Lawson, Frederick W.	Woodfield, Wood Lane.
50	Leather, Ernest Arthur	
53	Lupton, Mrs. Arthur	Headingley.
95	Lupton, Arthur G.	Wellington Street.
21	Lupton, Edgar	Moorlands, Headingley.
8	Lupton, Henry	Lyndhurst, Headingley.

54	Lupton, Joseph .	The Elms, Chapel-Allerton.
55	Lupton, John .	Moorlands, Headingley.
56	Lupton, William Walter .	The Grove, Roundhay.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares) .	Wellington Street.
62	MacCarthy, Charles D. .	Bank of England, Leeds.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Avenue House, Woodhouse Lane.
72	Marshall, John, F.R.A.S.	Church Institute.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D.	Grammar School, Leeds.
27	Maude, William Henry .	Middleton Lodge, Leeds.
117	Middleton, Arthur .	Hawk Hills, Chapel-Allerton.
66	Nicholson, A. H. .	
30	Nicholson, Marshall .	Middleton Hall, Beeston.
64	*Nickols, Richard .	
67	Nunneley, A. G. .	9, Beech Grove Terrace.
68	Oxley, James Walker .	28, Commercial Street.
93	Palmer, Henry John .	55, Albion Street.
28	*Passavant, P. W. .	
82	Pearson, John Thomas .	The Hall, Melmerby, Thirsk.
11	Price, Mrs. William N.	Hillary Place.
38	*Ralph, John, M.A. .	
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
18	Robson, A.W. M., F.R.C.S.	Hillary Place.
105	Ryder, Charles .	Gledhow Hill.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, John Edward .	Gledhow Wood, Gledhow.
57	Stringer, John William .	Inglebank, Far Headingley.
87	Talbot, Rev. E. S., D.D. .	The Vicarage, Hillary Place.
73	Teale, T. P., M.A., F.R.S.	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.

76	*Tennant, Thomas	.
78	*Tetley, F. W.	.
58	Thompson, Chas. F.	. 34, College Road, Leeds.
49	Thorp, John Hall	. Far Headingley.
79	Turner, Richard B.	. Oakleigh, Buxton.
80	Wailes, William	. 2, Albion Place.
71	Ward, John	. Moor-Allerton House.
111	*Watson, William Henry	.
41	Webb, Joseph S.	. 26, Park Row.
97	Weston, Edward	. Newton Park Villa, New Leeds.
42	Whiting, John	. Cliff Road.
83	Wicksteed, J.H., M.Inst.C.E.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M.	. 8, East Parade.
85	Wilson, John	. Seacroft Hall.
17	Wilson, Richard	. 28, Commercial Street.
35	Wood, Philip T.	. 22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah	. 29, Meadow Lane.
13	Stratten, Rev. J. R.	. Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert	. 13, St. John's Terrace.
2	Baines, Talbot, B.A.	. Albion Street.
48	Barran, Rowland H.	. Shaw Lane, Headingley.
4	Barwick, J. M.	. Low Hall, Yeadon.
5	Bedford, James E.	. Cardigan Road.
7	Best, Wm. Woodham, M.A.	31, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	. The Yorkshire College.

8	Bolland, W. T. .	Oriel House, Scarborough.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George .	Blackman Lane.
72	Brigg, Matthew A. .	12, Sholebroke Avenue.
11	Briggs, Riley .	Springfield Mount.
75	Brunton, George ..	Hillary Mount, Woodhouse Lane.
14	Corson, George .	Wood Lane, Headingley.
41	Crossley Thomas .	Highfield House, Headingley.
35	Croysdale, Mrs. .	29, Cromer Terrace.
16	Denny, T. G. .	2, Moor View, Hyde Park.
32	Dixon, A. S. .	Woodlands, Harehills Lane.
65	Eddison, Octavius, B.A. .	St. Helen's, Adel.
20	Eddison, Robert William	The Manor, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William .	
69	Fraser, James B. .	8, Park Square.
24	Gascoigne, F. C. Trench .	Parlington Park, nr. Garforth.
25	Goodman, Prof. John .	The Yorkshire College.
12	Hadow, Reginald .	Bank of England, Leeds.
27	*Hargrave, John .	
60	Harland, J. W. .	Headingley.
28	Hepper, John .	Clareville, Headingley.
80	Holmes, Joseph .	Chemical Works, Crown Street.
81	*Holroyd, James .	
30	Holt, H. S. .	Woodville, Roundhay.
31	Illingworth, William .	Flower Bank, Burley, Leeds.
33	Irwell, Arthur F. .	17, New Station Street.
6	Jackson, Richard .	Beech Villa, Cardigan Road.
34	Jackson, Rt. Hon. W. L., M.P. .	Allerton Hall, Leeds.
67	Jefferson, Robert P. .	Norton Villa, 26, Spencer Place.
63	*Jowitt, Miss E. M. .	
38	Lawson, Thomas .	Newton Hill, Potternewton.
39	*Lawson, John .	

88	Legard, Albert G., M.A. .	The Briary, Harrogate.
23	Lupton, Prof. Arnold .	6, De Grey Road.
44	McCheane, Miss .	The Hollies, Headingley.
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch .	Park Row.
9	Mathers, John Shackleton	Hanover House, Leeds.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	Morley, R. B. .	2, Westfield Terrace, Chapeltown.
49	Myers, W. C. .	Grove House, Roundhay.
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Brook House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
51	Nunneley, Thomas .	9, Beech Grove Terrace.
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter .	Springville, Shaw Lane.
59	Ramsbotham, S. H., M.D.	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	Riley, H. W. .	131, Briggate.
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	34, Call Lane.
68	Smith, William Farrar .	West Grove, Headingley.
76	Smithells, Prof. A., B.Sc.	The Yorkshire College.
37	Snowdon, Miss Mary .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., B.A.	Ashwood Villas, Headingley.
77	Titley, Mrs. Anthony .	Manor House, Victoria Grove.
78	Titley, John A. .	Newton Hill, Leeds.
79	Tottie, Mrs. J. W. (P) .	The Grange, Bedale.
64	Tweedale, John .	12, South Parade.
82	Walker, H. B. .	Heath Cottage, Moortown.
83	Ward, Edmund .	19, Bainbrigge Road, Headingley.

57	Ward, George, F.C.S.	Buckingham Ter., Headingley
90	Ward, William	32, Hyde Terrace.
3	Webb, William Henry	Aire Street.
85	Willson, J. J.	2, Moorland Terrace.
42	Wilson, Mrs. Richard	28, Commercial Street.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Addyman, J. W.	15, East Parade.
Albrecht, Martin	Bleak House, Headingley.
Appleyard, T. W., Jun.	Oak Lea, Cardigan Road.
Armistead, Edwin	39, Louis Street.
Asquith, John Robert	Bond Place.
Atkinson, Samuel	Moor-Allerton Lodge.
Baines, Edward	Mount Grange, Rawdon.
Barber, Miss	34, Westbourne Terrace.
Barran, Alfred	Cumberland Road, Headingley.
Barran, Mrs. John, Junr.	Westfield, Chapel-Allerton.
Bartholomew, W. H., C.E.	Ridge Way House.
Beaumont, Prof. R.	Cliff Mount, Hyde Park.
Bentfield, Charles	Shaw Lane, Headingley.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Bothamley, C. H., F.C.S.	The Yorkshire College.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	24, Mount Preston.
Brigg, Thomas S.	Cromer Terrace.
Brown, F. H., M.A.	Headingley Hill School.
Buckley, J. C.	Longfield, Headingley.
Bulmer, Charles	Blenheim Lodge.
Bulmer, George Bertram	Calverley Chambers, Victoria Sq.
Butler, Edmund	Kirkstall Forge.
Campbell, Archibald	23, Hyde Terrace.
Chadwick, Charles M., M.A., M.D.	29, Park Square.
Chorley, R.	Basinghall Street.

Clark, E. K.	88, Caledonian Road.
Clark, Miss	Potternewton.
Clark, Miss Alice	35, Mount Preston.
Clemons, G. H.	Burton Crescent, Far Headingley.
Conder, Rev. E. R., D.D.	1, Newton Grove, New Leeds.
Connal, B. M., M.A.	13, Beech Grove Terrace.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	Parcmont, Roundhay.
Croysdale, John	Monk Bridge Road, Headingley.
Dalton, George	The Yews, North Hill Road.
Davis, Miss Bertha	Milton Lodge, Grove Road.
Deane, E. E.	Batley.
Dobson, Dr. Joseph	27, Burley Lawn.
Drake, Dr. F. H.	Otley Road, Headingley.
Ellison, James Edward	10, De Grey Road.
Firth, William, Junr.	Woodsley House.
Flockton, William	Hopewell House, Oulton.
Foster, Frederick	Woodlesford.
Foster, George	Bleak House, Harehills.
Fox, Rev. J.	Stourton Grange, Hunslet.
Gardner, Wilson	Brookfield Terrace, Headingley.
Goodall, F. W.	9, Francis Street.
Griffith, Prof. T. W., M.D.	Park Square.
Hall, Frederick, M.D.	St. Mark's Villas.
Hall, William	Moor Lane, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	8, Blenheim Terrace.
Hassé, A.	31, Commercial Street.
Hellier, J. B., M.D.	De Grey Terrace.
Hewetson, H. B.	9, Hanover Square.

Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Holgate, Benjamin, F.G.S.	Regent House, Grosvenor Road.
Ingham, Hampton K.	Ridge House, Armley.
Ingham, J. P.	5, Blenheim Terrace.
Jackson, J.	Airedale Cliff, Newlay.
Jefferson, J. S.	4, Woodhouse Square.
Jessop, G. W.	Woodcliffe, Rawdon.
Jessop, T. R., F.R.C.S.	32, Park Square.
Johnston, W. D.	2, Beech Grove Terrace.
Jones, Frank W.	2, Moorland Road.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Joy, W. Lomas	Headingley.
Knight, Miss R.	Far Headingley.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lewkowitsch, J., Ph.D.	6, Warwick Place.
Little, F. Buller	Woodlands, Chapel-Allerton.
Lupton, E. A.	Horsforth.
Matterson, Miss	Cavendish House, Cavendish Rd.
Matthews, Frederick J. A.	Hilly Ridge House, Headingley.
Megson, Albert	Spencer Place, New Leeds.
Morrison, Sir George	Town Hall, Leeds.
Naylor, J. W.	Allerton House, Chapeltown.
Nedwill, Miss	8, Louis Street.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Ashfield, Headingley.
North, William	1, Virginia Road.
Oates, C. G.	Meanwoodside.
Passavant, Miss Laura M.	29, Virginia Road.
Peate, Jonathan	Guiseley.
Pepper, J. E.	7, Cromer Terrace.

Phillips, John Henry	Hazel House, Methley.
Pickles, J. J.	105, Camp Road.
Powell, William	4, Queen Square.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Rickards, C. A.	Bell Busk.
Rickards, G. H. L.	Pool.
Rider, James	8, Beech Grove Terrace.
Roberts, Mrs.	Holly Bank, Headingley.
Robinson, Edmund	42, Park Square.
Roebuck, W. Denison, F.L.S.	Sunny Bank.
Rogers, Prof. L. J., M.A., Mus.B.	13, Beech Grove Terrace.
Rumboll, Sydney	Hope Villa, Woodhouse Lane.
Sanders, J. A.	5, Blenheim Square.
Sanders, T. W.	Do.
Saville, H.	15, Springfield Place.
Scatcherd, Oliver	Morley, near Leeds.
Slade, Robert	14, Springfield Mount.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Spark, F. R.	29, Hyde Terrace.
Stables, Marshall	Hope Villa, Armley.
Stockdale, T.	Spring Lea.
Stubbins, John, F.G.S., F.R.M.S.	Inglebank, Far Headingley.
Sutcliffe, Francis	Torquay Terrace, Shaw Lane.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Thompson, Miss	St. Mark's Villas.
Tiffany, George John	17, Grove Terrace.
Titterington, Rev. W. T.	Fulneck, near Leeds.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, James	Newton Park.
Walker, George	Do.
Watson Charles	Burton Grange, Far Headingley.

Waudby, William	Fernville, Roundhay.
Whitham, T.	Bramhope.
Willans, J. W.	The Woodlands, Kirkstall.
Wood, John	11, St. Mark's Terrace.
Woodhouse, Edwin	The Grange, Armley.
Wray, Robert	40, Brunswick Street.
Wright, A.	Borough Brewery, Leeds.
Zossenheim, M.	Rose Mount, North Hill Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Bleak House, Headingley.
Armistead, Mrs.	39, Louis Street, New Leeds.
Atkinson, Miss	Moor-Allerton Lodge.
Atkinson, Mrs. E.	16, Blenheim Terrace.
Baines, Miss E. L.	Mount Grange, Rawdon.
Baines, Miss E. M.	Do.
Baker, Miss	Mr. Jessop, 32, Park Square.
Barber, Miss Ethel	34, Westbourne Terrace.
Barran, Mrs. John	Chapel-Allerton Hall.
Barran, Miss Ruth	Westfield, Chapel-Allerton.
Bartholomew, Miss Mary	Ridge Way House.
Beaumont, Mrs. R.	Cliff Mount, Hyde Park.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Bentfield, Mrs. C.	Shaw Lane, Headingley.
Birch, Mrs.	16, De Grey Terrace.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	24, Mount Preston.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brigg, Mrs. T. S.	Cromer Terrace.
Brunton, Miss	Hillary Mount.
Bulmer, Mrs. Charles	Blenheim Lodge.

Bulmer, Miss	Blenheim Lodge.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Campbell, Mrs. A.	23, Hyde Terrace.
Clemons, Mrs.	Burton Crescent, Far Headingley.
Connon, Mrs. J. W.	Park Row.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Miss Louisa	Do.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. J.	Heathfield, Monk Bridge Road.
Croysdale, Miss	Do. do.
Dalton, Mrs. G.	The Yews, North Hill Road.
Day, Miss	MissMatterson,Cavendish House.
Deane, Mrs.	Batley.
Ellison, Miss	10, De Grey Road.
Fox, Mrs. J.	Stourton Grange, Hunslet.
Goodall, Miss M.	Mr. Saville, 15, Springfield Place.
Hall, Mrs. F.	St. Mark's Villas.
Hall, Miss	Do.
Hall, Mrs. W.	Moor Lane, Headingley.
Hall, Miss	Do.
Hallilay, Mrs.	28, Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hartnell, Mrs. Wilson	8, Blenheim Terrace.
Hassé, Mrs.	31, Commercial Street.
Hepper, Miss	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirsch, Miss Annie	Do.
Hogg, Mrs. Henry	Mr. Hartley, Blenheim Terrace.
Holgate, Mrs. B.	Regent House, Headingley.
Jackson, Miss	Allerton Hall, Leeds.
Jefferson, Miss M.	4, Woodhouse Square.

Jessop, Mrs. T. R.	32, Park Square.
Jessop, Miss	Do.
Johnston, Miss	2, Beech Grove Terrace.
Jones, Miss	2, Moorland Road.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Ernest H.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, H.	Do.
Joy, Mrs. W. Lomas	Headingley.
Joy, Miss	Do.
Knight, Miss S. E.	Far Headingley.
Lawson, Miss	Bramhope.
Lee, Mrs.	Prof. Beaumont, Cliff Mount.
Little, Mrs. F. Buller	Woodlands, Chapel-Allerton.
Little, Miss Edith	Do. do.
Mathers, Miss	Hanover House.
Morley, Mrs.	2, Westfield Terrace, Chapeltown.
Morrison, Lady	Town Hall, Leeds.
Myers, Miss	Cavendish House.
Myers, Miss	Grove House, Roundhay.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Nicholson, Mrs. J. C.	Ashfield, Headingley.
Nicholson, Miss	Do. do.
Nussey, Miss	Potternewton Hall.
Nussey, Miss E.	Springville, Shaw Lane.
Nussey, Miss M.	Do.
Passavant, Miss F. J.	29, Virginia Road.
Pepper, Mrs. J. E.	7, Cromer Terrace.
Pickles, Mrs. J. J.	105, Camp Road.
Ramsbotham, Miss	16, Park Place.
Redmayne, Mrs. John	Grove House, Headingley.

Reymond, Miss L.	Mr. Paul Hirsch, Cookridge St.
Reynolds, Miss	Cliff Lodge, Hyde Park.
Richardson, Mrs.	Cliff Road.
Rickards, Miss	Wortley.
Roberts, Miss	Holly Bank, Headingley.
Robson, Mrs. A. W. Mayo	Hillary Place.
Rumboll, Mrs.	Hope Villa, Woodhouse Lane.
Ryder, Miss A. E.	Gledhow Hill.
Ryder, Miss E. I.	Do.
Ryder, Miss Louisa	Do.
Sanders, Miss	5, Blenheim Square.
Saville, Miss A.	15, Springfield Place.
Saville, Miss S. E.	Do.
Scatcherd, Mrs. O.	Morley.
Scattergood, Miss	41, Park Square.
Slade, Mrs. R.	14, Springfield Mount.
Slade, R. H.	Do. do.
Smith, Miss Farrar	West Grove, Moor Road.
Somers, Mrs.	48, Woodhouse Lane.
Spark, Mrs. F. R.	29, Hyde Terrace.
Stables, Mrs. M.	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Mrs. T.	Spring Lea.
Stockdale, Miss Fanny D.	Do.
Stroud, Mrs. W.	Ashwood Villas.
Sutcliffe, Miss	Torquay Terrace.
Sutcliffe, Miss K.	Do.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Tatham, Miss	Springfield Mount.
Teale, Miss	North Grange, Headingley.
Teale, Lionel Henry	Do. do.

Teale, Michael	North Grange, Headingley.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thompson, Miss E.	St. Mark's Villas.
Thornley, Miss	Mr. Illingworth, Flower Bank.
Thornley, Miss M.	Mr. Tetley, Cardigan Road.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Wicksteed, Miss C.	Mr. E. A. Lupton, Horsforth.
Willans, Mrs.	The Woodlands, Kirkstall.
Willson, Miss Emilie Dorothy	2, Moorland Terrace.
Willson, Miss Margaret	Do.
Wood, Miss	11, St. Mark's Terrace.
Woodhouse, Mrs. E.	The Grange, Armley.
Woodhouse, Miss	Do. do.
Zossenheim, Mrs. M.	Rose Mount, North Hill Lane.
Zossenheim, Miss B.	Do. do.
Zossenheim, A.	Do. do.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

The Right Rev. A. Barry, D.D., Assistant Bishop of Rochester, Knapdale, Upper Tooting, London, S.W.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

W. Boyne, F.S.A.

Sir Frederick J. Bramwell, F.R.S., M. Inst. C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

Lewis Llewelyn Dillwyn, M.P., F.L.S., F.G.S., Hendrefoilan, Swansea, Glamorganshire.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

George Lane Fox, Bramham Park.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hartley, Durban, Port Natal.

The Right Rev. the Lord Bishop of Hereford, The Palace, Hereford.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Clements R. Markham, C.B., F.R.S., F.L.S., Sec. R.G.S., &c., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

The Right Rev. the Lord Bishop of Nottingham, Leasingham, Sleaford.

Richard Owen, M.D., D.C.L., LL.D., F.R.S., British Museum, London.

C. C. Oxley, Minster House, Ripon.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., 21, Charles Street, Berkeley Square, London.

T. Wemyss Reid, 26, Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., Errington, Clapham Park, London, S.W.

Henry Seebohm, F.L.S., F.Z.S., 6, Tenterden Street, Hanover Square, London, W.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

John Robert Tennant, Kildwick Hall.

Prof. T. E. Thorpe, Ph.D., F.R.S., Normal School of Science, South Kensington.

Edward Harry Woods, Rosario, Argentine Republic.

July 18/92

LEEDS

Philosophical and Literary Society.

THE ANNUAL REPORT

For 1891-2.

ε

Se Le 1

THE

SEVENTY-SECOND REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION 1891-2.

READ AT THE ANNUAL MEETING, MAY 3rd, 1892.

LEEDS:
JOWETT & SOWRY, PRINTERS, 73, ALBION STREET.
1892.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SEVENTY-SECOND SESSION.

The Seventy-second Session of the Society was opened on October 27th by a Conversazione, at which nearly four hundred Members, Subscribers, and Guests were present. In addition to numerous objects of interest from our own collections, by the kindness of Col. Harding, Mr. A. S. Dixon, Dr. Eagland, Mr. W. H. Flower, Mr. J. Broadhead, Mr. E. J. Dodgshun, Messrs. Cassell & Co., Mr. R. Atkinson, and other gentlemen, a large number of Paintings, Original Etchings, and Drawings for book illustration were exhibited. Mr. H. Bendelack Hewetson showed some beautiful specimens of Egyptian Embroidery and Pottery, and Mr. George Bell his unique collection of Portraits of Yorkshire Worthies. Collections of Shells were exhibited by the Conchological Society and Mr. J. W. Taylor, and many interesting Microscopic Objects by local naturalists.

The General Meetings of the Society were well attended, and the Lectures of very varied interest. The thanks of the Society are due to Professor L. C. Miall, F.G.S., F.L.S., Mr. W. Hancock, F.L.S., F.R.G.S., Professor T. Clifford Allbutt, M.D., F.R.S., and Dr. Albert W. Schüddekopf, who gave their services gratuitously. The Syllabus of Lectures was as follows:—

1.—"Some difficulties in the Life of Aquatic Insects." By Prof. L. C. MIALL, F.L.S., F.G.S. *Nov. 3rd, 1891.*

2.—"An Astronomer's Thoughts about Krakatoa." With lantern illustrations. By Sir ROBERT S. BALL, LL.D., F.R.S. *Nov. 17th, 1891.*

3.—"The Strength and Weakness of England as a Great Power." By Colonel J. F. MAURICE, R.A., Professor of Military History at the Staff College. *Dec. 1st, 1891.*

4.—"Formosa: its geology, flora, fauna, and aborigines, &c." By W. HANCOCK, F.L.S., F.R.G.S., of the Chinese Imperial Customs Service. *Dec. 15th, 1891.*

5.—"The Troubadours." By Rev. P. H. WICKSTEED, M.A. *Jan. 5th, 1892.*

6.—"The Travels of Early Peoples: Trade and War Routes." By Dr. T. CLIFFORD ALLBUTT, F.R.S. *Jan. 19th, 1892.*

7.—"Henrik Ibsen." By EDMUND GOSSE, M.A. *Feb. 2nd, 1892.*

8.—"Recent Contributions to our knowledge of the Production and Consumption of Alcohol." With lantern illustrations. By Prof. PERCY F. FRANKLAND, Ph.D., B.Sc., F.R.S. *Feb. 16th, 1892.*

9.—"Exploration among the Ruined Cities of Mashonaland." By J. THEODORE BENT, M.A. *March 1st, 1892.*

10.—"The Evolution of Modern Photography." By Prof. R. MELDOLA, F.R.S. *March 15th, 1892.*

11.—"The History of the Faust Legend." By ALBERT W. SCHÜDDEKOPF, Ph.D. *April 5th, 1892.*

The number of Members and Subscribers is as follows:—

	1891	1892
Original Proprietary Members (78 shares) ...	70	71
New Proprietary Members (121 shares) ...	94	94
Ordinary Members	2	2
New Ordinary Members...	78	77
Annual Subscribers of £1 1s.	137	126
Annual Subscribers of 7s. 6d.	143	129
Total	524	499

27,168 visitors have paid for admission to the Museum.

Considerable progress has been made with the manuscript catalogues of the Museum, and that of the Geological collection, containing upwards of 3,000 entries, representing many times this number of specimens, has been completed. A valuable

series of permanent photographs of sections of the coal-measures under Leeds has been presented by Mr. F. W. Branson. They are suitably framed, and accompanied by the necessary geological information. This collection is of great and lasting interest, especially as the sections from which the photographs were taken are no longer visible.

A collection of British birds' eggs, to replace those stolen or wilfully destroyed some years ago, has been presented to the Society by the Curator (Mr. E. R. Waite), and by the liberality of the Mayor of Leeds (Ald. Wm. Boothroyd), a considerable number of less common specimens has been added.

In the Invertebrate collections, a case illustrating the transformations of insects has been prepared, and another is in progress to exemplify the powers of construction by which they provide for their own safety or capture their prey.

Many species of Lepidoptera have been reared during the season, and special attention has been paid to the hatching of trout-ova. The young trout were kept alive until the yolk-sac was absorbed. Much interest has been taken by visitors in both these novel exhibits.

Miss Robson has presented a valuable portrait by Schwanfelder of the Rev. Richard Winter Hamilton, LL.D., D.D., who for upwards of twenty years, until his untimely death in 1848, took a very active interest in the affairs of the Society. He was President in 1836-7-8, and contributed eighteen papers to its proceedings.

At the Annual Meeting in 1891, Mr. Richard Reynolds, F.C.S., F.I.C., resigned the position of Honorary Secretary, which he had held to the great advantage of the Society for twenty-two years, though he consented to continue his valuable assistance as a Member of the Council. The services which Mr.

Reynolds has rendered to the Society by his unwearying attention to its business, his unfailing tact, and his sound judgment, will be long remembered by his colleagues and the public.

In October, 1891, Professor L. C. Miall, F.L.S., F.G.S., owing to the pressure of other duties, placed his resignation in the hands of the Council. Professor Miall was appointed to the Curatorship of the Society in April, 1871, and in the course of twenty years has raised our collection to a high position among provincial Museums. As a small token of their appreciation of his long and invaluable services to the Society, a few friends presented Professor Miall with an Original Proprietary Share and a Zeiss Microscope. The Council were then enabled to elect Professor Miall one of the Honorary Curators in Zoology.

Mr. Edgar R. Waite, F.L.S., has been appointed Curator of the Museum.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1891.

1891.	Mean Temperature.	Mean Height of Barometer (inches).	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	36·4	29·896	1·32	1·37
February...	39·8	30·252	·03	·07
March	39·0	29·630	·96	1·17
April	42·2	29·829	1·66	1·85
May...	48·9	29·605	2·08	2·17
June...	58·1	29·781	·91	1·08
July	58·2	29·720	2·42	3·33
August	57·2	29·564	3·65	3·82
September	57·6	29·754	1·48	1·60
October	49·1	29·529	3·63	4·00
November	42·4	29·640	2·88	3·11
December	38·6	29·682	4·10	4·44

Mean monthly temperature—47·3°.

Mean monthly height of the barometer—29·740 inches.

Total rainfall for the year—Museum 25·12 inches; Woodhouse Cliff 28·01 inches. Average rainfall at the Museum for the ten years 1882-1891—24·24 inches.

Greatest degree of heat, indicated by the thermometer in the shade—82° on September 10th; minimum—13° on January 19th.

Greatest barometric pressure—30·582 inches on October 31st, the temperature of the mercury being 42°; least pressure—28·332 inches on November 11th, the temperature of the mercury being 49°.

Greatest fall of rain (during 24 hours)—·83 inches on October 14th.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain gauge above the street, 46 feet.

SUNSHINE AT LEEDS IN 1891.

The observations were made by Jordan's Photographic Sunshine Recorder at the following stations:—

1. The Museum, situate in the centre of the town; elevation above the sea, 137 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the town; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the town; elevation, 475 feet; on the fringe of the borough.
4. Union Infirmary, Burmantofts, 1 mile from the centre of the town; elevation, 200 feet; industrial district.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible duration
JANUARY	1	18·7	7·2
	2	36·4	14·0
	3	45·3	17·5
	4	24·3	9·4
FEBRUARY	1	22·0	7·9
	2	34·6	12·5
	3	63·2	22·7
	4	35·2	12·7
MARCH	1	91·3	24·9
	2	102·0	27·8
	3	102·5	27·9
	4	106·1	28·9
APRIL	1	59·3	14·3
	2	89·8	21·6
	3	99·4	23·9
	4	92·2	22·2
MAY	1	119·7	24·8
	2	140·1	29·1
	3	150·2	31·2
	4	132·8	27·5
JUNE	1	124·8	25·2
	2	155·2	31·4
	3	168·4	34·0
	4	148·0	29·9
JULY	1	128·7	25·9
	2	153·6	30·9
	3	165·0	33·2
	4	139·8	28·1
AUGUST	1	62·2	13·9
	2	79·2	17·6
	3	94·3	21·0
	4	86·1	19·2
SEPTEMBER	1	106·2	28·2
	2	117·2	31·1
	3	133·7	35·5
	4	120·9	32·1
OCTOBER	1	57·6	17·5
	2	75·1	22·8
	3	92·4	28·1
	4	73·6	22·4
NOVEMBER	1	8·1	3·1
	2	12·2	4·6
	3	26·0	9·8
	4	15·8	6·0
DECEMBER	1	12·1	5·0
	2	6·7	2·8
	3	23·0	9·5
	4	8·5	3·5

SUMMARY FOR THE YEAR.

Museum	18·2	per cent.	of possible	duration.
Woodhouse Cliff ..	22·5	,,	,,	,,
Lawnswood	26·1	,,	,,	,,
Burmantofts	22·1	,,	,,	,,
	21·2	per cent.	mean for	1891.
	24·4	,,	,,	1890.
	20·7	,,	,,	1889.
	19·9	,,	,,	1888.
	28·0	,,	,,	1887.
	23·0	,,	,,	five years.

The Meteorological Office publishes the following record of sunshine in 1891, as observed at stations taken as representing specified districts:—

	Percentage of possible duration.	Difference from mean.
Scotland, N. (Stornoway, &c.)	36	0
,, E. (Aberdeen, Marchmont)	30	—1
,, W. (Glasgow, Douglas, Isle of Man)	31	+1
England, N.E. (Durham, York)	28	0
,, N.W. (Stonyhurst, Blackpool, Llandudno)	28	—2
,, Mid. (Cirencester, Oxford, &c.)	31	0
,, S. (London, Hastings, Southampton, &c.)	36	+3
,, E. (Hillington, Geldestone, Cambridge)	33	—1
,, S.W. (Pembroke, Falmouth, Plymouth, &c.) ..	37	+1
Ireland, N. (Armagh, Markree Castle)	31	+3
,, S. (Dublin, Parsonstown, Valencia)	34	+1
Channel Islands (Jersey)	46	+3

SUMMARY.

32·6	per cent.	mean for United Kingdom,	1891.
30·7	,,	,, ,,	1890.
29·2	,,	,, ,,	1889.
27·5	,,	,, ,,	1888.
35·6	,,	,, ,,	1887.
31·1	,,	,, ,,	5 years.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the year 1891-2.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1891		—		1	5	11
,, Annual Subscriptions, viz.:—						
78 New Proprietary Members, at 21s. ...	81	18	0			
2 Original Ordinary ,, 42s. ...	4	4	0			
65 New Ordinary ,, 21s. ...	68	5	0			
127 Annual Subscribers, at 21s.	133	7	0			
130 Annual Subscribers, at 7s. 6d. ...	48	15	0			
,, Arrears	11	12	6			
				348	1	6
,, Rent, viz.:—						
Cellars	40	0	0			
Lecture Room	153	18	6			
				193	18	6
,, Receipts from Visitors to Museum ...	113	4	0			
,, Receipts from Conversazione	10	5	0			
				123	9	0
,, Sale of Guides	3	0	7			
,, Sundries	2	8	0			
				5	8	7
,, Donation by the Mayor of Leeds... ...	...		...	5	0	0
,, Balance due to Bank	...		...	65	12	5
				£742	15	11

PAYMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank, May 1st, 1891 ...		—		87	7	4
,, Repairs and Alterations	29	19	5			
,, Rates and Taxes	4	8	8			
,, Fire Insurance	13	15	0			
,, Coals, &c.	24	1	11			
,, Gas	17	0	9			
,, Cleaning	9	4	2			
				98	9	11
,, Salaries	289	7	0			
,, Fee to Auditor	2	2	0			
				291	9	0
,, Collections, viz.:—						
Zoological...	11	18	6			
Library	23	14	4			
Scientific Apparatus	2	4	0			
				37	16	10
,, Postages	9	12	0			
,, Advertising and Printing	30	15	3			
,, Lectures	97	15	10			
,, Conversazione Expenses	47	14	2			
,, Interest and Bank Commission	4	15	0			
,, Sundries	21	3	9			
				211	16	0
,, Electric Lighting	...		...	14	7	9
,, Balance in hand	...		...	1	9	1
				£742	15	11

I have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 28th, 1892.

CHAS. BEEVERS,
CHARTERED ACCOUNTANT.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1891-2.

ZOOLOGY.

Capercaillie (*Tetroa urogallus*)	Mr. William Harrison, Wilstrop.
British Birds' Eggs	Ald. Boothroyd, Mayor.
Ditto	The Curator.
Nest of Baltimore Oriole (*Icterus baltimora*)	Mr. James Wickson, Clayton West.
Chamæleon (*Chamæleon vulgaris*).....	Mrs. F. Hatchard, Pontefract.
New Zealand Swift (*Hepialus virescens*)	Hon. & Rev. J. W. Lascelles, Goldsborough.

ETHNOLOGY.

Batanga Canoe (West Africa) deposited by Commander John Denison, R.N.	Per Mr. Armitage Ledgard, Scarcroft.

Portrait of the late Dr. Richard Winter Hamilton, by Schwanfelder	Miss Robson, Scagglethorpe, Malton.
Six Photographs, in 2 frames, to illustrate the Geology of the Leeds Coal Measures	Mr. F. W. Branson, Leeds.

PUBLICATIONS.

Catalogue of British Oligocene and Eocene Mollusca	British Museum.
Catalogue of Birds, Vols. XIX. and XX.	
Catalogue of Fossil Birds	
Catalogue of Lepidoptera Heterocera, Part VIII.	

Portœ Magiæ Naturalis, D.D. LXXXVIIII.	Rev. C. Hargrove, M.A.
Yorkshire County Magazine, Parts I.-X., 1891	J. Horsfall Turner (Editor).
Zoological Record, 1888 to date	Deposited by the Yorkshire Naturalists' Union.
Time Reckoning for the 20th Century, Sanford Fleming, C.M.G., C.E.	Smithsonian Institution.
Omaha and Pouka Letters, J. O. Dorsey	
Catalogue of Prehistoric Works, East of the Rocky Mountains, Cyrus Thomas.....	
Claus und die Entwicklung der Scyphomedusen. A. Goette	The Author.
North American Fauna, No. 5	U.S. Department of Agriculture.
"Our Trees," John Robinson	Essex Institute, U.S.A.
Observations on the Temperature of the Nidd, March, 1889, to July, 1891. Geo. Paul, F.R.Met.S.....	The Author.
New South Wales and other Minerals (No. 6), A. Liversidge, M.A.,F.R.S.	The Author.
Scientific Correspondence of Joseph Priestley, Hy. C. Bolton, 1892 ...	Purchased.
The Great Trigonometrical Survey of India, Vol. XIV.	Secretary of State in Council of India.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-WEEKLY.

Bollettino delle Publicationi Italiane, 1891-2	The Compiler.

MONTHLY.

Annals and Magazine of Natural History.....	Purchased.
Geological Magazine	Purchased.

Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions.....	Purchased.
Proceedings of the Royal Society ...	The Society.
Proceedings of the Royal Society of Edinburgh, Vol. XVII., 1889-90 ... Transactions do. do. Vol. XXXIV., 1890, and XXXVI., Part I., 1889-90	The Society.
Proceedings of the Royal Institution of Great Britain, Vol. XIII., Part II., 1892	The Institution.
Transactions of the Royal Irish Academy, Vol. XXIX., Parts XVI. and XVII., 1891 ..... Proceedings do. do. Vol. I., No. V., and Vol. II., No. I., 1891	The Academy.

Scientific Proceedings of the Royal Dublin Society, Vol. VI., Part X., 1890, and Vol. VII., Parts I. and II., 1891 ..... Scientific Transactions do. Vol. IV., Parts VI., VII., and VIII., 1890-91	The Society.
Journal and Proceedings of the Royal Society of New South Wales, Vol. XXIV., Part II., 1890	The Society.
Publications of the Royal Swedish Academy of Sciences.....	The Academy.
Papers of the Royal University of Norway	The University.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger, Heft III., 1890, and I. and II., 1891	Royal Danish Society of Sciences.
Papers and Proceedings of the Royal Society of Tasmania, 1890.....	The Society.
Proceedings and Transactions of the Royal Society of Canada, Vol. VIII., 1890	The Society.
Proceedings of the Royal Society of Queensland	The Society.
Annual Report of the Royal Cornwall Polytechnic Society, 1890	The Society.
Journal and Annual Report of the Royal Institution of Cornwall	The Institution.
Bulletin Société Impériale, Moscow ...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deutschen Akademie der Naturforscher, 1890.....	The Academy.
British Association Reports, 1890 and 1891	The Association.
Australasian Association Report	The Association.

Reports of the Smithsonian Institution, 1888 and 1889 ..... Smithsonian Miscellaneous Collections Smithsonian Contributions ..... Miscellaneous Publications of the Bureau of Ethnology, 1889-91	The Institution.
Transactions of the Academy of Science of St. Louis	The Academy.
Transactions and Proceedings of the New Zealand Institute, Vol. XXIII., 1890	The Institute.
Annual Report, Middlesex Hospital...	The Hospital.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science, 1890	The Union.
Victorian Year-Book, Vol. I., 1890-91. By Henry Heylyn Hayter, C.M.G.	The Author
Bulletin of the Essex Institute, U.S.A., Vols. XXI. and XXII., 1889-90 ...	The Institute
Proceedings of the Birmingham Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society, 1890	The Society.
Proceedings of the Glasgow Philosophical Society, Vol. XXII., 1890-91	The Society.
Transactions of the American Philosophical Society ..... Proceedings do. Vol. XXIX., Nos. 135 and 136, 1891	The Society.
Report of the Halifax Literary and Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society, Vol. II., Parts VII.—IX.	The Society.
Report of the Committee of Leicester Town Museum	The Museum.
Annual Report of the Brighton Town Museum, 1890-91.....	The Museum.

Annual Report of the Birkenhead Literary and Scientific Society, 1890-91	The Society.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society, 4th Series, Vol. IV. (Parts IV. and V.), 1890-91	The Society.
Proceedings of the Liverpool Literary and Philosophical Society	The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association	The Association.
Annual Report of the Sheffield Literary and Philosophical Society, 1890 and 1891	The Society.
Annual Report and Transactions of the Hull Literary and Philosophical Society	The Society.
Report of the President of Yale University ..... Catalogue ditto. 1891-2	The University.
Proceedings of the Canadian Institute Annual Report do. 1890 Transactions do. Vol. I., Part II., 1890-91, and Vol. II., Part I., 1891	The Institute.
Proceedings and Transactions of the Nova Scotian Institute of Natural Science, Vol. VII., Part IV., 1889-90	The Institute.
Proceedings of the Academy of Natural Sciences of Philadelphia, Parts I., II., and III., 1891 ..... Papers do. do.	The Academy.
Proceedings of the American Academy of Arts and Sciences, New Series, Vol. XVII., 1889-90	The Academy.
Annual Report of the Chester Society of Natural Science and Literature, 1890-91	The Society.

Transactions of the Wisconsin Academy of Sciences, Arts, and Letters	The Academy.
Memoirs of the National Academy of Sciences, Washington.....	The Academy.
Proceedings of the Davenport Academy of Natural Science.....	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia ...	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba, 1890	The Society.
Memoires de la Société d'émulation d'Abbeville	The Society.
Journal of the Elisha Mitchell Scientific Society, Vol. VIII., Part I.	The Society.
Journal and Proceedings of the Hamilton Association, Part VII., 1890-91	The Association.
Memorias de la Sociedad Científica (Mexico), Tomo IV., Num 11 and 12, 1891, and V., 1—4, 1891-2	The Society.
Greenwich Observations.....	The Astronomer-Royal.
Transactions of the Astronomical Observatory of Yale University ... Annual Report do. 1890-91	The University.
Memoirs of the Royal Astronomical Society	The Society.
Annuario del Observations Astronomico Nacional, Mexico, 1891	The Astronomer.
Boletin del Observatorio Astronomico Nacional de Tacubaya, Tomo I., Num 5, 6, 7, and 8	The Observer.
"Boletin Mensual" Observatorio Meteorologico-Magnetico, Central de Mexico, Tomo III., Num 1, 2, and 3, 1890	The Editor.

Cape Meridian Observations	Cape Astronomer-Royal.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall, 1890	Purchased.
Monographs of the Palæontographical Society, Vol. XLV., 1891	Purchased.
Proceedings of the Geologists' Association, Vol. XI., Part IX., 1890, and I.—VII., 1891	The Association.
Journal of the Royal Geological Society of Ireland	The Society.
Proceedings of the Liverpool Geological Society, Vol. VI., Part III., 1890-91	The Society.
Journal of the Liverpool Geological Association, Vol. XI., 1890-91	The Association.
Transactions of the Manchester Geological Society, Vol. XXI., Parts 7—13, 1891	The Society.
Transactions of the Leeds Geological Association, Part VI., 1890	The Association.
Transactions of the Edinburgh Geological Society, Vol. VI., Part III., 1890-91	The Society.
Records of the Geological Survey of N.S.W., Vol. II., Parts III. and IV., 1891	The Surveyor.
Memoirs of the Geological Survey of N.S.W., Palæontology, Nos. 5 and 8 (Part 2), 1891	
Annual Report and Papers of the Department of Mines, N.S.W., 1890	The Department.
United States Geological Survey, 10th Annual Report, 1888-9	The Department.
Geological and Natural History Survey of Canada	Department of the Interior.
Annual Report and Papers—do. Vol. IV., 1888-9	
Contributions to Canadian Palæontology, 1891	

Geological Record	Purchased.
Transactions and Proceedings of the Royal Geographical Society of Australasia (N.S.W. Branch).....	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1890-91.....	The Club.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne.....	The Tyneside Naturalists' Field Club.
Proceedings of the Berwickshire Naturalists' Club, 1887—89	The Club.
Proceedings of the Boston Society of Natural History, U.S.A., Vol. XXV., Parts I. and II., 1890-91 ... Memoirs do.	The Society.
Transactions of the Leeds Naturalists' Club and Scientific Association, Vols. I. and II.....	The Association.
Bulletin of United States National Museum, Nos. 41 and 42 ..... Proceedings do. Vol. XIII., 1890... Report do. 1888...	The Museum.
Records of the Australian Museum, Vol. I., Nos. 6—10, 1891 ..... Report of the Trustees of the Australian Museum, 1890	The Trustees.
Report of the Manchester Museum, Owens College.....	The Curator.
Prodromus of the Zoology of Victoria	The Editor.
Publications of the Ray Society, Vol. IV., Part I., 1890.....	Purchased.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College, 1890-91 ..... Annual Report of Harvard College, 1890-91.....	The College.
Harvard University Catalogue	The University.

Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien, Band XXXIII., 1890, and XXXIV., 1891	The Society.
Report of Associated Architectural Societies, Vol. XX., Part II., 1890	The Society.
Journal of the Chester Archæological and Historic Society, Vol. III., 1890	The Society.
Report of the Muséum National, Rio-de-Janeiro..... Archivos ditto.....	Directeur Général.

LIST OF OFFICERS AND COUNCIL,

1892-3.

OFFICERS.

PRESIDENT	REV. J. H. D. MATTHEWS, M.A.
VICE-PRESIDENTS. . .	T. PRIDGIN TEALE, M.A., F.R.S. REV. CHAS. HARGROVE, M.A.
HONORARY SECRETARIES .	SYDNEY LUPTON, M.A. ARTHUR SMITHELLS, B.Sc.
TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	J. A. NUNNELEY, M.B.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. LOUIS C. MIALL F.L.S., F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. CHAS. HARGROVE, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	RICHARD REYNOLDS, F.I.C.
WM. WOODHAM BEST, M.A.	THOMAS SCATTERGOOD.
NATHAN BODINGTON, M.A	J. H. WICKSTEED, M.Inst.C.E.
T. WALTER HARDING.	J. J. WILLSON.
THOMAS MARSHALL, M.A.	EDMUND WILSON.

Secretary . . .	W. F. HUSBAND, LL.B.
Curator . . .	EDGAR R. WAITE, F.L.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1892-3.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	*Aldam, Wm.	
3	Armitage, Robert	Farnley.
4	Arthington, Robert	Headingley.
5	Baines, Herbert S.	Cawood, Apperley Bridge.
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	7, St. Margaret's Terrace, Ilkley.
11	*Brown, James	
31, 62	*Brown, S. J. (2 shares)	
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
26	*Ellershaw, John	
28	Empson, Christopher	Beechwood, Sowerby Bridge.
29, 48	Ford, J. R. (2 shares)	Quarry Dene, Weetwood.

33	Goodman, Benjamin .	Gledhow House.
36-8	Gott, Wm. Henry (3 shares)	Armley House.
61	Greenhow, Wm. T. .	Newton Cottage, Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
39	Harding, T. R. .	St. Ann's Tower, Headingley.
64	Harding, Thomas Walter .	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Avenue House, Woodhouse Lane.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	Claremont, Leeds.
30	Horsfall, J., M.A., F.R.C.S.	Merivale Lodge, Meyrick Road, Bournemouth, E.
47	Ingham, Constantine .	5, Blenheim Terrace.
49	Jowitt, Mrs. John .	Harehills, Potternewton.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	Beech Holme, Burley, Leeds.
32	Lupton, Edward Basil .	Moorlands, Headingley.
57	Lupton, Mrs. F. .	Beechwood, Roundhay.
53	Lupton, Francis M., M.A.	Rockland, Newton Park.
56	Lupton, Sydney, M.A. .	Grove Cottage, Roundhay.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S. .	13, Belsize Avenue, London, N W.
60	Marshall, John, M.A. .	Derwent Island, Keswick.
66	Marshall, Reginald Dykes	The Cottage, Keswick.
67	Marshall, V. A. E., B.A. .	Monk Coniston, Ambleside.
50	Mason, Charles Letch .	Moorland Terrace.
65	Miall, Prof. Louis C. .	5, Montpellier Terrace.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	
10	Streatfeild, Richard James.	The Rocks, Uckfield, Sussex.
71	Tatham, George .	Springfield Mount.

52	Taylor, Benjamin .	20, Moorland Road.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	The Grange, Bedale.
34. 35	Truro, the Bishop of (2 shares)	The Palace, Truro.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
17	Walker, Reginald Thomas .	1, Furnival's Inn, Holborn, London, E.C.
76	*Ward, William Sykes .	
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	Denison Hall.
27	Wood, Robert Henry .	15, Bainbrigge Road, Headingley.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S. .	16, Blenheim Terrace.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
62	Barley, D. H., M.D. .	Grove House, Burmantofts.
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford .	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	31, Park Row.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
10	Bowling, John .	Newstead House, Spencer Place.
33-4,84	*Brown, S. J. (3 shares) (P) .	
5, 6	Brown, G. W. (2 shares) .	Heathfield, Ilkley.
89	Buckton, Joshua .	Meanwood.
1	Burrell, Benjamin A. .	5, Mount Preston.

86	Carter, J. B.	Elm House, Potternewton.
9	*Chadwick, William	
14	Conyers, W. H.	The Hills, Ilkley.
45	Craven, John	3, Beech Grove Terrace.
98	Craven, Joseph	1, Beech Grove Terrace.
104	Crawford, John William	Newton Lane.
26	Dawson, Thomas	Caledonian House, Caledonian Road.
19	Fairbairn, Sir Andrew	Askham Grange, near York.
118	Flitch, John R.	Chapel-Allerton.
52	Fraser, Mrs. James B.	Claremont, Horsforth.
102-3, 106-10, 114-15	Gott, William Henry (P) (9 shares)	Armley House.
22	Hargrave, Charles	St. Agnesgate House, Ripon.
23	*Hargrave, James	
7	Hargrove, Rev. C., M.A.	De Grey Terrace.
16	Harvey, William	Heathfield, Ilkley.
81	Hatch, S. C.	Clyde House, Westcombe Park Road, Blackheath, London.
44	Hepper, Mrs. J. H.	Suffolk Lodge, Harrogate.
51	Hoggard, Alfred	25, Cavendish Road.
36	*Hudson, Henry	
120	Ingham, Samuel	Headingley Hall.
96	Jepson, Edward George	20, Springfield Mount.
39	Jowitt, Robert Benson	Elmhurst, Harehills, Leeds.
40	Joy, Alfred Lomas	Headingley.
43	*Kitson, James	
46	Kitson, J. Hawthorn	Elmete Hall, Roundhay.
47	Kitson, Sir James, Bart.	Gledhow Hall.
48	Kitson, Mrs. F. W.	Burley Hill, Leeds.
90	Lawson, Frederick W.	Woodfield, Wood Lane.
50	Leather, Ernest Arthur	Birstwith Hall, Harrogate.
53	Lupton, Mrs. Arthur	Headingley.
95	Lupton, Arthur G.	Wellington Street.

21	Lupton, Edgar	Moorlands, Headingley.
8	Lupton, Henry	Lyndhurst, Headingley.
54	Lupton, Joseph	The Elms, Chapel-Allerton.
55	Lupton, John	Moorlands, Headingley.
56	Lupton, William Walter	The Grove, Roundhay.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares)	Rockland, Newton Park.
88	McGuire, Thomas	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R.	Avenue House, Woodhouse Lane.
72	Marshall, John, F.R.A.S.	Church Institute.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D.	Grammar School, Leeds.
27	Maude, William Henry	Middleton Lodge, Leeds.
117	Middleton, Arthur	Hawk Hills, Chapel-Allerton.
66	Nicholson, A. H.	
30	Nicholson, Marshall	Middleton Hall, near Leeds.
64	*Nickols, Richard	
67	Nunneley, A. G.	9, Beech Grove Terrace.
68	Oxley, James Walker	28, Commercial Street.
93	Palmer, Henry John	55, Albion Street.
28	*Passavant, P. W.	
82	Pearson, John Thomas	The Hall, Melmerby, Thirsk.
11	Price, Mrs. William N.	Hillary Place.
38	*Ralph, John, M.A.	
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
18	Robson, A. W. M., F.R.C.S.	Hillary Place.
105	Ryder, Charles	Gledhow Hill.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
119	Schunck, John Edward	Gledhow Wood, Gledhow.
57	Stringer, John William	Inglebank, Far Headingley.
87	Talbot, Rev. Canon, D.D.	The Vicarage, Hillary Place.
73	Teale, T. P., M.A., F.R.S.	North Grange, Headingley.
74	Teasdale, Washington	Bainbrigge Road, Headingley.

76	*Tennant, Thomas	
78	*Tetley, F. W.	
58	Thompson, Chas. F.	34, College Road, Leeds.
49	Thorp, John Hall	Far Headingley.
79	Turner, Richard B.	Oakleigh, Buxton.
80	Wailes, William	2, Albion Place.
71	Ward, John	Moor-Allerton House.
111	*Watson, William Henry	
41	Webb, Joseph S.	26, Park Row.
97	Weston, Edward	Newton Park Villa, New Leeds.
42	Whiting, John	Cliff Road.
83	Wicksteed, J.H., M.Inst.C.E.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M.	8, East Parade.
85	*Wilson, John	
17	Wilson, Richard	28, Commercial Street.
35	Wood, Philip T.	22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah	29, Meadow Lane.
13	Stratten, Rev. J. R.	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert	13, St. John's Terrace.
2	Baines, Talbot, B.A.	Albion Street.
48	Barran, Rowland H.	Shaw Lane, Headingley.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Cardigan Road.
7	Best, Wm. Woodham, M.A.	31, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	The Yorkshire College.
8	Bolland, W. T.	
10	Bousfield, Charles Edward	St. Mary's Mount.

15	Bray, George	Blackman Lane.
72	Brigg, Matthew A.	12, Sholebroke Avenue.
11	Briggs, Riley	Springfield Mount.
75	Brunton, George	Hillary Mount, Woodhouse Lane.
14	Corson, George	Wood Lane, Headingley.
41	Crossley, Thomas	Highfield House, Headingley.
35	Croysdale, Mrs. James	29, Cromer Terrace.
16	Denny, T. G.	2, Moor View, Hyde Park.
32	Dixon, A. S.	Woodlands, Harehills Lane.
65	Eddison, Octavius, B.A.	St. Helen's, Adel.
20	Eddison, Robert William	The Manor, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William	
69	Fraser, James B.	8, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, nr. Garforth.
25	Goodman, Prof. John	The Yorkshire College.
12	Hadow, Reginald	Bank of England, Leeds.
27	*Hargrave, John	
60	Harland, J. W.	Headingley.
28	Hepper, John	Clareville, Headingley.
80	Holmes, Joseph	Chemical Works, Crown Street.
81	*Holroyd, James	
30	Holt, H. S.	Woodville, Roundhay.
31	Illingworth, William	Flower Bank, Burley, Leeds.
33	Irwell, Arthur F.	8, Park Drive, Heaton, Bradford.
6	Jackson, Richard	Beech Villa, Cardigan Road.
34	Jackson, Rt. Hon. W. L., M.P.	Allerton Hall, Leeds.
67	Jefferson, Robert P.	Norton Villa, 26, Spencer Place.
63	*Jowitt, Miss E. M.	
38	*Lawson, Thomas	
39	*Lawson, John	
88	Legard, Albert G., M.A.	The Briary, Harrogate.
23	Lupton, Prof. Arnold	6, De Grey Road.
44	McCheane, Miss	The Hollies, Headingley.

45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch (P).	Park Row.
9	Mathers, John Shackleton.	Hanover House, Leeds.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	Morley, R. B. .	14, Westfield Terrace, Chapeltown.
49	Myers, W. C. .	Grove House, Roundhay.
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Brook House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
51	Nunneley, Thomas .	9, Beech Grove Terrace.
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley .	Potternewton Hall.
56	Nussey, Peter .	Springville, Shaw Lane.
59	Ramsbotham, S. H., M.D. .	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	Riley, H. W. .	131, Briggate.
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	20, Call Lane.
68	*Smith, William Farrar .	
76	Smithells, Prof. A., B.Sc. .	The Yorkshire College.
37	Snowdon, Miss Mary .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., B.A.	Ashwood Villas, Headingley.
77	Titley, Mrs. Anthony .	Manor House, Victoria Grove.
78	Titley, John A. .	Newton Hill, Leeds.
79	Tottie, Mrs. J. W. (P) .	The Grange, Bedale.
64	Tweedale, John .	12, South Parade.
82	Walker, H. B. .	
83	Ward, Edmund .	19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S. .	Buckingham Terrace, Headingley.
90	Ward, William .	32, Hyde Terrace.
3	Webb, William Henry .	Aire Street.
85	Willson, J. J. .	2, Moorland Terrace.
42	Wilson, Mrs. Richard .	28, Commercial Street.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Addyman, J. W.	15, East Parade.
Albrecht, Martin	Bleak House, Headingley.
Armistead, Edwin	39, Louis Street.
Armitage, George Frederick, M.A.	52, Boar Lane.
Asquith, John Robert	Bond Place.
Barber, Miss	34, Westbourne Terrace.
Barran, Alfred	Cumberland Road, Headingley.
Barran, Mrs. John, Junr.	Westfield, Chapel-Allerton.
Bartholomew, W. H., C.E.	Ridge Way House.
Bayldon, Rev. G.	3, Gipton Mount, Roundhay Rd.
Beaumont, Prof. R.	14, Regent Park Avenue.
Bedford, Charles S.	Broomleigh, Chapel Lane.
Bentfield, Charles	Shaw Lane, Headingley.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	24, Mount Preston.
Brigg, Thomas S.	Cromer Terrace.
Brown, F. H., M.A.	Headingley Hill School.
Buckley, J. C.	Longfield, Headingley.
Bulmer, Charles	Blenheim Lodge.
Bulmer, George Bertram	Calverley Chambers, Victoria Sq.
Butler, Bernard F.	Kepstorn, Kirkstall.
Butler, Edmund	Kirkstall Forge.
Chadwick, Charles M., M.A., M.D.	29, Park Square.
Chorley, R.	Basinghall Street.
Clark, E. K.	88, Caledonian Road.
Clark, Miss	Potternewton.
Cohen, Dr. J. B.	6, Montpellier Terrace.
Conder, Rev. E. R., D.D.	5, Cromer Terrace.
Connal, B. M., M.A.	13, Beech Grove Terrace.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Crampton, W. T.	Parcmont, Roundhay.

Croysdale, John	Monk Bridge Road, Headingley.
Dale, James M.	Rydal House, Harrogate.
Dalton, George	The Yews, North Hill Road.
Dobson, Dr. Joseph	27, Burley Lawn.
Ellison, James Edward	10, De Grey Road.
Firth, William, Junr.	Woodsley House.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Fox, Rev. J.	Stourton Grange, Hunslet.
Gardner, Wilson	Brookfield Terrace, Headingley.
Gillespie, C. M., B.A.	The Yorkshire College.
Green, John H.	Horbury, near Wakefield.
Griffith, Prof. T. W., M.D.	Park Square.
Groom, T. T.	The Yorkshire College.
Hall, Frederick, M.D.	St. Mark's Villas.
Hall, William	Moor Lane, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	8, Blenheim Terrace.
Hassé, A.	31, Commercial Street.
Hellier, J. B., M.D.	De Grey Terrace.
Hewetson, H. B.	9, Hanover Square.
Hey, Charles E. Milnes, M.A.	38, College Road.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Holgate, Benjamin, F.G.S.	Regent House, Grosvenor Road.
Ingham, J. P.	5, Blenheim Terrace.
Jackson, J.	Airedale Cliff, Newlay.
Jackson, Miss Mary	Well Close Mount.
Johnston, W. D.	2, Beech Grove Terrace.
Jones, Frank W.	2, Moorland Road.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.

Knight, Miss	Far Headingley.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lee, J.	11, Lifton Place.
Lewkowitsch, J., Ph.D.	24, Moorland Road.
Little, F. Buller	Clough House, Chapel-Allerton.
Lupton, E. A.	Horsforth.
Matthews, Frederick J. A.	Hilly Ridge House, Headingley.
Megson, Albert	Spencer Place, New Leeds.
Morrison, Sir George	Stanleigh, Headingley.
Mozley, J. R., M.A.	Southleigh, Headingley.
Naylor, J. W.	Allerton House, Chapeltown.
Nedwill, Miss	8, Louis Street.
Nettleton, William Whitehouse	3, Bainbrigge Road, Headingley.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Ashfield, Headingley.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Pepper, Miss	Newton Green Hall.
Phillips, John Henry	Hazel House, Methley.
Pickles, J. J.	105, Camp Road.
Powell, William	4, Queen Square.
Ransome, Prof. Cyril, M.A.	Shaw Lane, Headingley.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Rider, James	8, Beech Grove Terrace.
Robinson, Edmund	42, Park Square.
Roebuck, W. Denison, F.L.S.	Sunny Bank.
Rogers, Prof. L. J., M.A., Mus.B.	13, Beech Grove Terrace.
Rumboll, Sydney	Hope Villa, Woodhouse Lane.
Sanders, J. A.	5, Blenheim Square.
Sanders, T. W.	Do.
Saville, H.	15, Springfield Place.
Scatcherd, Oliver	Morley, near Leeds.

Croysdale, John	Monk Bridge Road, Headingley.
Dale, James M.	Rydal House, Harrogate.
Dalton, George	The Yews, North Hill Road.
Dobson, Dr. Joseph	27, Burley Lawn.
Ellison, James Edward	10, De Grey Road.
Firth, William, Junr.	Woodsley House.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Fox, Rev. J.	Stourton Grange, Hunslet.
Gardner, Wilson	Brookfield Terrace, Headingley.
Gillespie, C. M., B.A.	The Yorkshire College.
Green, John H.	Horbury, near Wakefield.
Griffith, Prof. T. W., M.D.	Park Square.
Groom, T. T.	The Yorkshire College.
Hall, Frederick, M.D.	St. Mark's Villas.
Hall, William	Moor Lane, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	8, Blenheim Terrace.
Hassé, A.	31, Commercial Street.
Hellier, J. B., M.D.	De Grey Terrace.
Hewetson, H. B.	9, Hanover Square.
Hey, Charles E. Milnes, M.A.	38, College Road.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Holgate, Benjamin, F.G.S.	Regent House, Grosvenor Road.
Ingham, J. P.	5, Blenheim Terrace.
Jackson, J.	Airedale Cliff, Newlay.
Jackson, Miss Mary	Well Close Mount.
Johnston, W. D.	2, Beech Grove Terrace.
Jones, Frank W.	2, Moorland Road.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.

Knight, Miss	Far Headingley.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lee, J.	11, Lifton Place.
Lewkowitsch, J., Ph.D.	24, Moorland Road.
Little, F. Buller	Clough House, Chapel-Allerton.
Lupton, E. A.	Horsforth.
Matthews, Frederick J. A.	Hilly Ridge House, Headingley.
Megson, Albert	Spencer Place, New Leeds.
Morrison, Sir George	Stanleigh, Headingley.
Mozley, J. R., M.A.	Southleigh, Headingley.
Naylor, J. W.	Allerton House, Chapeltown.
Nedwill, Miss	8, Louis Street.
Nettleton, William Whitehouse	3, Bainbrigge Road, Headingley.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Ashfield, Headingley.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Pepper, Miss	Newton Green Hall.
Phillips, John Henry	Hazel House, Methley.
Pickles, J. J.	105, Camp Road.
Powell, William	4, Queen Square.
Ransome, Prof. Cyril, M.A.	Shaw Lane, Headingley.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Rider, James	8, Beech Grove Terrace.
Robinson, Edmund	42, Park Square.
Roebuck, W. Denison, F.L.S.	Sunny Bank.
Rogers, Prof. L. J., M.A., Mus.B.	43, Beech Grove Terrace.
Rumboll, Sydney	Hope Villa, Woodhouse Lane.
Sanders, J. A.	5, Blenheim Square.
Sanders, T. W.	Do.
Saville, H.	Springfield Place.
Scatchard, Oliver	near Leeds.

Slade, Robert	14, Springfield Mount.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Stables, Marshall	Hope Villa, Armley.
Stockdale, T.	Spring Lea.
Stuhlmann, Mrs.	Cavendish House, Cavendish Rd.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Thompson, Edward	72, Lofthouse Place.
Thompson, Miss	St. Mark's Villas.
Tiffany, George John	118, Kirkgate.
Titterington, Rev. W. T.	Fulneck, near Leeds.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, James	Newton Park.
Walker, George	Do.
Watson, Charles	Burton Grange, Far Headingley.
Waudby, William	Fernville, Roundhay.
Whitehead, W. W.	12, Beech Grove Terrace.
Whitham, T.	Bramhope.
Willans, J. W.	The Woodlands, Kirkstall.
Wood, John	11, St. Mark's Terrace.
Woodhouse, Edwin	The Grange, Armley.
Wray, Robert	40, Brunswick Street.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Bleak House, Headingley.
Armistead, Mrs.	39, Louis Street, New Leeds.
Atkinson, Mrs. E.	16, Blenheim Terrace.
Barber, Miss Ethel	34, Westbourne Terrace.
Barran, Mrs. John	Chapel-Allerton Hall.
Barran, Miss Ruth	Westfield, Chapel-Allerton.
Bartholomew, Miss Mary	Ridge Way House.

Beaumont, Mrs. R.	14, Regent Park Avenue.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Bentfield, Mrs. C.	Shaw Lane, Headingley.
Birch, Mrs.	16, De Grey Terrace.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	24, Mount Preston.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brigg, Mrs. T. S.	Cromer Terrace.
Brunton, Miss	Hillary Mount.
Bulmer, Miss	Blenheim Lodge.
Bulmer, Miss S. E.	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Butler, Miss D.	Kepstorn, Kirkstall.
Colquhoun, Miss	Newton Green Hall.
Connon, Mrs. J. W.	Park Row.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Miss Louisa	Do.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. J.	Heathfield, Monk Bridge Road.
Croysdale, Miss	Do. do.
Dalton, Mrs. G.	The Yews, North Hill Road.
Day, Miss	Mrs. Stuhlmann, Cavendish Rd.
Ellison, Miss	10, De Grey Road.
Fox, Mrs. J.	Stourton Grange, Hunslet.
Goodall, Miss M.	Mr. Saville, 15, Springfield Place.
Hall, Mrs. F.	St. Mark's Villas.
Hall, Miss	Do.
Hall, Mrs. W.	Moor Lane, Headingley.
Hallilay, Mrs.	28, Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hartnell, Mrs. Wilson	8, Blenheim Terrace.
Hassé, Mrs.	31, Commercial Street.

Hassé, Eric	31, Commercial Street.
Hepper, Miss M. E.	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hey, Mrs. C. E. Milnes	38, College Road.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirsch, Miss Annie	Do.
Hogg, Mrs. Henry	Mr. Hartley, Blenheim Terrace.
Holgate, Mrs. B.	Regent House, Headingley.
Jackson, Miss	Allerton Hall, Leeds.
Jacoby, Miss	Mr. Josephy, 25, Hyde Terrace.
Johnston, Miss	2, Beech Grove Terrace.
Jones, Miss	2, Moorland Road.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Ernest H.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, H.	Do.
Jowers, Miss E.	Grammar School, Leeds.
Lawson, Miss	Bramhope.
Little, Mrs. F. Buller	Clough House, Chapel-Allerton.
Little, Miss Edith	Do. do.
Mathers, Miss	Hanover House.
Morley, Mrs.	14, Westfield Terrace, Chapeltown.
Morrison, Lady	Stanleigh, Headingley.
Mozley, Mrs.	Southleigh, Headingley.
Mozley, Miss	Do. do.
Myers, Miss	Mrs. Stuhlmann, Cavendish Rd.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Nicholson, Mrs. J. C.	Ashfield, Headingley.
Nicholson, Miss	Do. do.
Nussey, Miss	Potternewton Hall.
Nussey, Mrs.	Springville, Shaw Lane.
Nussey, Miss E.	Do. do.

Nussey, Miss M.	Springville, Shaw Lane.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss	Mrs. Stuhlmann, Cavendish Rd.
Pickles, Mrs. J. J.	105, Camp Road.
Ramsbotham, Miss	16, Park Place.
Ransome, Mrs.	Shaw Lane, Headingley.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	Cliff Road.
Rickards, Miss	Wortley.
Robson, Mrs. A. W. Mayo	Hillary Place.
Rumboll, Mrs.	Hope Villa, Woodhouse Lane.
Ryder, Miss A. E.	Gledhow Hill.
Ryder, Miss E. I.	Do.
Ryder, Miss Louisa	Do.
Sanders, Miss	5, Blenheim Square.
Saville, Miss A.	15, Springfield Place.
Saville, Miss S. E.	Do.
Scatcherd, Mrs. O.	Morley.
Scattergood, Miss	41, Park Square.
Slade, Mrs. R.	14, Springfield Mount.
Slade, R. H.	Do.
Somers, Mrs.	48, Woodhouse Lane.
Stables, Mrs. M.	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Mrs. T.	Spring Lea.
Stroud, Mrs. W.	Ashwood Villas.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Teale, Mrs.	Mr. Armitage, 52, Boar Lane.
Teale, Miss	North Grange, Headingley.
Teale, Lionel Henry	Do. do.
Teale, Michael	Do. do.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.

Thompson, Miss E.	St. Mark's Villas.
Thompson, Miss Erna	Rev. G. Bayldon, 3, Gipton Mount.
Thornley, Miss	Mr. Illingworth, Flower Bank.
Thornley, Miss M.	Mr. Tetley, Cardigan Road.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Watson, Miss	Mr. Armitage, 52, Boar Lane.
Wicksteed, Miss C.	Mr. E. A. Lupton, Horsforth.
Willson, Miss Emilie Dorothy	2, Moorland Terrace.
Willson, Miss Margaret	Do.
Wood, Miss	11, St. Mark's Terrace.
Woodhouse, Mrs. E.	The Grange, Armley.
Woodhouse, Miss	Do. do.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

W. Boyne, F.S.A.

Sir Frederick J. Bramwell, F.R.S., M. Inst. C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

Lewis Llewelyn Dillwyn, M.P., F.L.S., F.G.S., Hendrefoilan, Swansea, Glamorganshire.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

George Lane Fox, Bramham Park.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S., Stoke Bishop, Bristol.

Wm. Hartley, Durban, Port Natal.

The Right Rev. the Lord Bishop of Hereford, The Palace, Hereford.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch (P).	Park Row.
9	Mathers, John Shackleton.	Hanover House, Leeds.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	Morley, R. B. .	14, Westfield Terrace, Chapeltown.
49	Myers, W. C. .	Grove House, Roundhay.
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Brook House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
51	Nunneley, Thomas .	9, Beech Grove Terrace.
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley .	Potternewton Hall.
56	Nussey, Peter .	Springville, Shaw Lane.
59	Ramsbotham, S. H., M.D. .	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	Riley, H. W. .	131, Briggate.
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	20, Call Lane.
68	*Smith, William Farrar .	
76	Smithells, Prof. A., B.Sc. .	The Yorkshire College.
37	Snowdon, Miss Mary .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., B.A.	Ashwood Villas, Headingley.
77	Titley, Mrs. Anthony .	Manor House, Victoria Grove.
78	Titley, John A. .	Newton Hill, Leeds.
79	Tottie, Mrs. J. W. (P) .	The Grange, Bedale.
64	Tweedale, John .	12, South Parade.
82	Walker, H. B. .	
83	Ward, Edmund .	19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S. .	Buckingham Terrace, Headingley.
90	Ward, William .	32, Hyde Terrace.
3	Webb, William Henry .	Aire Street.
85	Willson, J. J. .	2, Moorland Terrace.
42	Wilson, Mrs. Richard .	28, Commercial Street.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Addyman, J. W.	15, East Parade.
Albrecht, Martin	Bleak House, Headingley.
Armistead, Edwin	39, Louis Street.
Armitage, George Frederick, M.A.	52, Boar Lane.
Asquith, John Robert	Bond Place.
Barber, Miss	34, Westbourne Terrace.
Barran, Alfred	Cumberland Road, Headingley.
Barran, Mrs. John, Junr.	Westfield, Chapel-Allerton.
Bartholomew, W. H., C.E.	Ridge Way House.
Bayldon, Rev. G.	3, Gipton Mount, Roundhay Rd.
Beaumont, Prof. R.	14, Regent Park Avenue.
Bedford, Charles S.	Broomleigh, Chapel Lane.
Bentfield, Charles	Shaw Lane, Headingley.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	24, Mount Preston.
Brigg, Thomas S.	Cromer Terrace.
Brown, F. H., M.A.	Headingley Hill School.
Buckley, J. C.	Longfield, Headingley.
Bulmer, Charles	Blenheim Lodge.
Bulmer, George Bertram	Calverley Chambers, Victoria Sq.
Butler, Bernard F.	Kepstorn, Kirkstall.
Butler, Edmund	Kirkstall Forge.
Chadwick, Charles M., M.A., M.D.	29, Park Square.
Chorley, R.	Basinghall Street.
Clark, E. K.	88, Caledonian Road.
Clark, Miss	Potternewton.
Cohen, Dr. J. B.	6, Montpellier Terrace.
Conder, Rev. E. R., D.D.	5, Cromer Terrace.
Connal, B. M., M.A.	13, Beech Grove Terrace.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Crampton, W. T.	Parcmont, Roundhay.

Croysdale, John	Monk Bridge Road, Headingley.
Dale, James M.	Rydal House, Harrogate.
Dalton, George	The Yews, North Hill Road.
Dobson, Dr. Joseph	27, Burley Lawn.
Ellison, James Edward	10, De Grey Road.
Firth, William, Junr.	Woodsley House.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Fox, Rev. J.	Stourton Grange, Hunslet.
Gardner, Wilson	Brookfield Terrace, Headingley.
Gillespie, C. M., B.A.	The Yorkshire College.
Green, John H.	Horbury, near Wakefield.
Griffith, Prof. T. W., M.D.	Park Square.
Groom, T. T.	The Yorkshire College.
Hall, Frederick, M.D.	St. Mark's Villas.
Hall, William	Moor Lane, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	8, Blenheim Terrace.
Hassé, A.	31, Commercial Street.
Hellier, J. B., M.D.	De Grey Terrace.
Hewetson, H. B.	9, Hanover Square.
Hey, Charles E. Milnes, M.A.	38, College Road.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Holgate, Benjamin, F.G.S.	Regent House, Grosvenor Road.
Ingham, J. P.	5, Blenheim Terrace.
Jackson, J.	Airedale Cliff, Newlay.
Jackson, Miss Mary	Well Close Mount.
Johnston, W. D.	2, Beech Grove Terrace.
Jones, Frank W.	2, Moorland Road.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.

Knight, Miss	Far Headingley.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lee, J.	11, Lifton Place.
Lewkowitsch, J., Ph.D.	24, Moorland Road.
Little, F. Buller	Clough House, Chapel-Allerton.
Lupton, E. A.	Horsforth.
Matthews, Frederick J. A.	Hilly Ridge House, Headingley.
Megson, Albert	Spencer Place, New Leeds.
Morrison, Sir George	Stanleigh, Headingley.
Mozley, J. R., M.A.	Southleigh, Headingley.
Naylor, J. W.	Allerton House, Chapeltown.
Nedwill, Miss	8, Louis Street.
Nettleton, William Whitehouse	3, Bainbrigge Road, Headingley.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Ashfield, Headingley.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Pepper, Miss	Newton Green Hall.
Phillips, John Henry	Hazel House, Methley.
Pickles, J. J.	105, Camp Road.
Powell, William	4, Queen Square.
Ransome, Prof. Cyril, M.A.	Shaw Lane, Headingley.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Rider, James	8, Beech Grove Terrace.
Robinson, Edmund	42, Park Square.
Roebuck, W. Denison, F.L.S.	Sunny Bank.
Rogers, Prof. L. J., M.A., Mus.B.	13, Beech Grove Terrace.
Rumboll, Sydney	Hope Villa, Woodhouse Lane.
Sanders, J. A.	5, Blenheim Square.
Sanders, T. W.	Do.
Saville, H.	15, Springfield Place.
Scatcherd, Oliver	Morley, near Leeds.

Slade, Robert	14, Springfield Mount.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Stables, Marshall	Hope Villa, Armley.
Stockdale, T.	Spring Lea.
Stuhlmann, Mrs.	Cavendish House, Cavendish Rd.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Thompson, Edward	72, Lofthouse Place.
Thompson, Miss	St. Mark's Villas.
Tiffany, George John	118, Kirkgate.
Titterington, Rev. W. T.	Fulneck, near Leeds.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, James	Newton Park.
Walker, George	Do.
Watson, Charles	Burton Grange, Far Headingley.
Waudby, William	Fernville, Roundhay.
Whitehead, W. W.	12, Beech Grove Terrace.
Whitham, T.	Bramhope.
Willans, J. W.	The Woodlands, Kirkstall.
Wood, John	11, St. Mark's Terrace.
Woodhouse, Edwin	The Grange, Armley.
Wray, Robert	40, Brunswick Street.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Bleak House, Headingley.
Armistead, Mrs.	39, Louis Street, New Leeds.
Atkinson, Mrs. E.	16, Blenheim Terrace.
Barber, Miss Ethel	34, Westbourne Terrace.
Barran, Mrs. John	Chapel-Allerton Hall.
Barran, Miss Ruth	Westfield, Chapel-Allerton.
Bartholomew, Miss Mary	Ridge Way House.

Beaumont, Mrs. R.	14, Regent Park Avenue.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Bentfield, Mrs. C.	Shaw Lane, Headingley.
Birch, Mrs.	16, De Grey Terrace.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	24, Mount Preston.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brigg, Mrs. T. S.	Cromer Terrace.
Brunton, Miss	Hillary Mount.
Bulmer, Miss	Blenheim Lodge.
Bulmer, Miss S. E.	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Butler, Miss D.	Kepstorn, Kirkstall.
Colquhoun, Miss	Newton Green Hall.
Connon, Mrs. J. W.	Park Row.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Miss Louisa	Do.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. J.	Heathfield, Monk Bridge Road.
Croysdale, Miss	Do. do.
Dalton, Mrs. G.	The Yews, North Hill Road.
Day, Miss	Mrs. Stuhlmann, Cavendish Rd.
Ellison, Miss	10, De Grey Road.
Fox, Mrs. J.	Stourton Grange, Hunslet.
Goodall, Miss M.	Mr. Saville, 15, Springfield Place.
Hall, Mrs. F.	St. Mark's Villas.
Hall, Miss	Do.
Hall, Mrs. W.	Moor Lane, Headingley.
Hallilay, Mrs.	28, Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hartnell, Mrs. Wilson	8, Blenheim Terrace.
Hassé, Mrs.	31, Commercial Street.

Hassé, Eric	31, Commercial Street.
Hepper, Miss M. E.	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hey, Mrs. C. E. Milnes	38, College Road.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirsch, Miss Annie	Do.
Hogg, Mrs. Henry	Mr. Hartley, Blenheim Terrace.
Holgate, Mrs. B.	Regent House, Headingley.
Jackson, Miss	Allerton Hall, Leeds.
Jacoby, Miss	Mr. Josephy, 25, Hyde Terrace.
Johnston, Miss	2, Beech Grove Terrace.
Jones, Miss	2, Moorland Road.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Ernest H.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, H.	Do.
Jowers, Miss E.	Grammar School, Leeds.
Lawson, Miss	Bramhope.
Little, Mrs. F. Buller	Clough House, Chapel-Allerton.
Little, Miss Edith	Do. do.
Mathers, Miss	Hanover House.
Morley, Mrs.	14, Westfield Terrace, Chapeltown.
Morrison, Lady	Stanleigh, Headingley.
Mozley, Mrs.	Southleigh, Headingley.
Mozley, Miss	Do. do.
Myers, Miss	Mrs. Stuhlmann, Cavendish Rd.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Nicholson, Mrs. J. C.	Ashfield, Headingley.
Nicholson, Miss	Do. do.
Nussey, Miss	Potternewton Hall.
Nussey, Mrs.	Springville, Shaw Lane.
Nussey, Miss E.	Do. do.

Nussey, Miss M.	Springville, Shaw Lane.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss	Mrs. Stuhlmann, Cavendish Rd.
Pickles, Mrs. J. J.	105, Camp Road.
Ramsbotham, Miss	16, Park Place.
Ransome, Mrs.	Shaw Lane, Headingley.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	Cliff Road.
Rickards, Miss	Wortley.
Robson, Mrs. A. W. Mayo	Hillary Place.
Rumboll, Mrs.	Hope Villa, Woodhouse Lane.
Ryder, Miss A. E.	Gledhow Hill.
Ryder, Miss E. I.	Do.
Ryder, Miss Louisa	Do.
Sanders, Miss	5, Blenheim Square.
Saville, Miss A.	15, Springfield Place.
Saville, Miss S. E.	Do.
Scatcherd, Mrs. O.	Morley.
Scattergood, Miss	41, Park Square.
Slade, Mrs. R.	14, Springfield Mount.
Slade, R. H.	Do.
Somers, Mrs.	48, Woodhouse Lane.
Stables, Mrs. M.	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Mrs. T.	Spring Lea.
Stroud, Mrs. W.	Ashwood Villas.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Teale, Mrs.	Mr. Armitage, 52, Boar Lane.
Teale, Miss	North Grange, Headingley.
Teale, Lionel Henry	Do. do.
Teale, Michael	Do. do.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.

Thompson, Miss E.	St. Mark's Villas.
Thompson, Miss Erna	Rev. G. Bayldon, 3, Gipton Mount.
Thornley, Miss	Mr. Illingworth, Flower Bank.
Thornley, Miss M.	Mr. Tetley, Cardigan Road.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Watson, Miss	Mr. Armitage, 52, Boar Lane.
Wicksteed, Miss C.	Mr. E. A. Lupton, Horsforth.
Willson, Miss Emilie Dorothy	2, Moorland Terrace.
Willson, Miss Margaret	Do.
Wood, Miss	11, St. Mark's Terrace.
Woodhouse, Mrs. E.	The Grange, Armley.
Woodhouse, Miss	Do. do.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

W. Boyne, F.S.A.

Sir Frederick J. Bramwell, F.R.S., M. Inst. C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

Lewis Llewelyn Dillwyn, M.P., F.L.S., F.G.S., Hendrefoilan, Swansea, Glamorganshire.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

George Lane Fox, Bramham Park.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S., Stoke Bishop, Bristol.

Wm. Hartley, Durban, Port Natal.

The Right Rev. the Lord Bishop of Hereford, The Palace, Hereford.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Clements R. Markham, C.B., F.R.S., F.L.S., Sec. R.G.S., &c., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

The Right Rev. the Lord Bishop of Nottingham, Leasingham, Sleaford.

Sir Richard Owen, M.D., D.C.L., LL.D., F.R.S., Shene Lodge, East Shene, Surrey.

C. C. Oxley, Minster House, Ripon.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., 21, Charles Street, Berkeley Square, London.

T. Wemyss Reid, 26, Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., Errington, Clapham Park, London, S.W.

Henry Seebohm, F.L.S., F.Z.S., 6, Tenterden Street, Hanover Square, London, W.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

John Robert Tennant, Kildwick Hall.

Prof. T. E. Thorpe, Ph.D., F.R.S., Normal School of Science, South Kensington.

Edward Harry Woods, Rosario, Argentine Republic.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of , to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being shall be an effectual discharge to my Executors for the said Legacy.*

Jan 24. 93

LEEDS

Philosophical and Literary Society.

THE ANNUAL REPORT

For 1892-3.

Je Lc 1

THE

SEVENTY-THIRD REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION 1892-3.

READ AT THE ANNUAL MEETING, MAY 2nd, 1893.

LEEDS:
JOWETT & SOWRY, PRINTERS AND LITHOGRAPHERS,
78, ALBION STREET.

1893.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SEVENTY-THIRD SESSION.

During the Seventy-third Session of the Society the General Meetings have been well attended, and the subjects of the Lectures of very varied interest.

The thanks of the Society are due to Mr. C. Milnes Gaskell, Mr. Alfred Austin, The President (Rev. J. H. D. Matthews), and Rev. C. G. Lang, who gave their services gratuitously. The List of Lectures was as follows:—

1.—"Social Pictorial Satire." By GEORGE DU MAURIER. *Oct. 18th, 1892.*

2.—"Photographs of Flying Bullets, &c." By C. V. BOYS, F.R.S. *Nov. 1st, 1892.*

3.—"The Songs of Birds." By W. WARDE FOWLER, M.A. *Nov. 15th, 1892.*

4.—"Phases of Plant Life in the Tropics." By D. MORRIS, M.A., F.L.S., Assistant Director of the Royal Gardens, Kew. *Dec. 6th, 1892.*

5.—"Recent Excavations in Greece." By CHARLES WALDSTEIN, Ph.D. *Dec. 20th, 1892.*

6.—"Richard Monckton Milnes, Lord Houghton." By C. MILNES GASKELL, M.A. *Jan. 17th, 1893.*

7.—"Poetry and Pessimism." By ALFRED AUSTIN. *Feb. 7th, 1893.*

8.—"Style." By The PRESIDENT (Rev. J. H. D. MATTHEWS, M.A.). *Feb. 14th, 1893.*

9.—"Methods by which Animals conceal themselves." By E. B. POULTON, M.A., F.R.S. *Feb. 21st, 1893.*

10.—"Walt Whitman." By Rev. C. G. LANG, M.A., Fellow of All Souls' College, Oxford. *March 7th, 1893.*

11.—"Animal Pedigrees." By Prof. A. MILNES MARSHALL, D.Sc., F.R.S. *March 21st, 1893.*

In May and June, 1892, a Course of six Object Lessons on Natural History was given on Saturday mornings by Miss Simpson to a class of young persons. The attendance was satisfactory, and the course was financially successful. A similar course will be given by Miss Simpson next summer.

The number of Members and Subscribers is as follows:—

	1892	1893
Original Proprietary Members (78 shares) ...	71	71
New Proprietary Members (121 shares) ...	94	97
Ordinary Members	2	2
New Ordinary Members...	77	76
Annual Subscribers of £1 1s.	126	116
Annual Subscribers of 7s. 6d.	129	121
Total	499	483

24,346 visitors have paid for admission to the Museum.

Our Mineralogical collection has been enriched by 187 specimens, presented by the Trustees of the British Museum, through the kindness of Mr. L. Fletcher, F.R.S., the Keeper of the Minerals; and by a valuable series of specimens of gold-bearing strata from Mashonaland, presented by Mr. J. W. Webster.

Gifts of Fossils have been received from Mr. John Simpson, Mr. Fisher and other gentlemen, and a valuable collection of British Trilobites has been obtained by purchase.

Numerous additions have been made to the collection of Insects.

By the loan of examples of British Marine Shells from the Conchological Society, a fair collection of the British Mollusca is now on view in the Museum; this Society has also presented several specimens of Echinoderms from Devonshire.

Many gifts of Zoological objects have been received, including several valuable fishes from Mr. W. E. Collinge, *Euthemisto compressus*, a crustacean new to Britain, from Mr. W. D. Roebuck, and two skulls of the Tasmanian Wolf from Mr. W. H. Gellibrand, an Honorary Member of the Society.

Mr. Hanson has presented a large photograph of Mr. William Osburn (b. 1793), of Leeds.

Though the debt due from the Society for so long has at last been paid off, it is a matter of some concern that this is due to an increase in the somewhat fluctuating and uncertain receipts from our Hall and Library, while the more reliable revenue derived from Annual Subscribers, the number of whom constitutes a fair index of the interest taken by the public in our work, continues to show a steady decrease.

The Council desire to record their regret at the loss which they have sustained by the death of their colleague, Mr. W. W. Best, who, as long as health permitted, took much interest in the work of the Society. By the death of Sir Richard Owen the Society has lost one of its oldest Honorary Members, and the Scientific World one of its foremost and most venerated names.

On February 18th, 1893, Mr. E. R. Waite resigned his position as Curator of the Museum, having been appointed to a similar position at Sydney. Mr. Henry Crowther, who has returned to us after an absence of twelve years, entered upon the duties of Curator on February 20th, 1893.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1892.

1892.	Mean Temperature.	Mean Height of Barometer (inches).	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	36·7	29·627	1·43	1·98
February...	38·0	29·602	2·11	2·21
March	37·6	29·880	·80	1·00
April	44 6	29·853	1·06	1·24
May...	52·6	29·815	2·91	2·47
June...	54·2	29·656	4·23	4·31
July	56·7	29·851	1·81	1·78
August	59·1	29·705	2·67	2·79
September	54·7	29·745	1·53	1·53
October	44·9	29·539	7·01	6·62
November	44·0	29·828	1·80	1·94
December	35·8	29·788	·52	·65

Mean monthly temperature—46·5°.

Mean monthly height of the barometer—29·740 inches.

Total rainfall for the year—Museum 27·88 inches; Woodhouse Cliff 28·52 inches. Average rainfall at the Museum for the ten years 1883-1892—24·12 inches.

Greatest degree of heat, indicated by the thermometer in the shade—80° on June 9th and August 23rd; minimum—19° on December 26th, 28th, 29th.

Greatest barometric pressure—30·498 inches on March 30th, the temperature of the mercury being 50°; least pressure—28·840 inches on February 2nd, the temperature of the mercury being 50°.

Greatest fall of rain (during 24 hours)—2·84 inches on October 14th.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain gauge above the street, 46 feet.

SUNSHINE AT LEEDS IN 1892.

The observations were made by Jordan's Photographic Sunshine Recorder at the following stations:—

1. The Museum, situate in the centre of the city; elevation above the sea, 137 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the city; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the city; elevation, 475 feet; on the fringe of the city.
4. Union Infirmary, Burmantofts, 1 mile from the centre of the city; elevation, 200 feet; industrial district.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible duration.
JANUARY	1	30·7	11·8
	2	31·3	12·0
	3	51·7	19·9
	4	41·2	15·9
FEBRUARY	1	49·3	17·7
	2	58·4	21·0
	3	68·2	24·5
	4	58·2	20·9
MARCH	1	89·8	24·2
	2	115·5	31·4
	3	142·1	38·7
	4	119·4	32·5
APRIL	1	151·9	36·6
	2	182·2	43·9
	3	202·2	48·7
	4	189·8	45·7
MAY	1	146·5	30·4
	2	168·8	35·0
	3	181·7	37·7
	4	177·7	36·8
JUNE	1	142·7	28·6
	2	175·5	35·5
	3	179·3	36·3
	4	182·8	36·9
JULY	1	101·0	20·3
	2	131·2	26·4
	3	122·9	24·7
	4	120·2	24·2
AUGUST	1	109·1	24·3
	2	140·2	31·2
	3	151·0	33·6
	4	133·5	29·7
SEPTEMBER	1	97·7	25·9
	2	114·7	30·4
	3	130·2	34·5
	4	100·5	27·2
OCTOBER	1	62·7	19·1
	2	86·5	26·3
	3	99·3	30·2
	4	88·7	26·9
NOVEMBER	1	4·0	1·5
	2	20·8	7·8
	3	38·0	14·4
	4	22·3	8·4
DECEMBER	1	2·7	1·1
	2	18·2	7·5
	3	50·5	20·8
	4	22·8	9·4

SUMMARY FOR THE YEAR.

Museum	22·2	per cent. of possible duration.
Woodhouse Cliff ..	27·9	,, ,, ,,
Lawnswood	31·8	,, ,, ,,
Burmantofts	28·2	,, ,, ,,

27·5	per cent. mean for	1892.
22·2	,, ,,	1891.
24·4	,, ,,	1890.
20·7	,, ,,	1889.
19·9	,, ,,	1888.
28·0	,, ,,	1887.
23·8	,, ,,	six years.

The Meteorological Office publishes the following records of sunshine in 1892, as observed at stations taken as representing specified districts:—

	Percentage of possible duration.	Difference from mean.
Scotland, N. (Stornoway, &c.)	25	—1
,, E. (Aberdeen, Marchmont)	30	—1
,, W. (Glasgow, Douglas, Isle of Man)	32	+2
England, N.E. (Durham, York)	30	+2
,, N.W. (Stonyhurst, Blackpool, Llandudno)	32	+2
,, Mid. (Cirencester, Oxford, &c.)	33	+2
,, S. (London, Hastings, Southampton, &c.)	33	0
,, E. (Hillington, Geldestone, Cambridge)	35	+1
,, S.W. (Pembroke, Falmouth, Plymouth, &c.) ..	39	+3
Ireland, N. (Armagh, Markree Castle)	30	+2
,, S. (Dublin, Parsonstown, Valencia)	33	0
Channel Islands (Jersey)	45	+2

SUMMARY.

35·2	per cent. mean for United Kingdom,	1892.
32·6	,, ,, ,,	1891.
30·7	,, ,, ,,	1890.
29·2	,, ,, ,,	1889.
27·5	,, ,, ,,	1888.
35·6	,, ,, ,,	1887.
31·7	,, ,, ,,	6 years.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the year 1892-3.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1892		—		1	9	1
,, Annual Subscriptions, viz.:—						
79 New Proprietary Members, at 21s. ...	82	19	0			
2 Original Ordinary ,, 42s. ...	4	4	0			
62 New Ordinary ,, 21s. ...	65	2	0			
111 Annual Subscribers, at 21s.	116	11	0			
120 Annual Subscribers, at 7s. 6d. ...	45	0	0			
,, Arrears	8	2	0			
				321	18	0
,, Rent, viz.:—						
Cellars	40	0	0			
Lecture Room	223	19	0			
				263	19	0
,, Receipts from Visitors to Museum ...				101	8	10
,, Sale of Guides	4	6	9			
,, Sundries	1	9	0			
				5	15	9
				£694	10	8

PAYMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank, May 1st, 1892 ...		—		65	12	5
,, Repairs and Alterations	43	10	3			
,, Rates and Taxes	4	8	8			
,, Fire Insurance	12	10	0			
,, Coals, &c.	23	15	6			
,, Gas	19	10	10			
,, Cleaning	7	12	4			
				111	7	7
,, Salaries	291	16	1			
,, Fee to Auditor	2	2	0			
				293	18	1
,, Collections, viz.:—						
Geological	10	0	0			
Zoological...	7	7	8			
Library	28	11	6			
Scientific Apparatus	3	13	6			
				49	12	8
,, Postages	11	2	10			
,, Advertising and Printing	34	14	9			
,, Lectures	91	12	4			
,, Interest and Bank Commission	2	17	0			
,, Sundries	11	5	3			
				151	12	2
,, Electric Lighting	...		...	3	18	2
,, Balance at Bank	...		...	17	18	4
,, ,, in hand	...		...	0	11	3
				£694	10	8

I have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 16th, 1893.

CHAS. BEEVERS,
CHARTERED ACCOUNTANT.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1892-3.

ZOOLOGY.

Two Skulls of Tasmanian Wolf (*Thylacinus cynocephalus*)	Mr. W. H. Gellibrand, Cleveland, Tasmania.
Small Trout and Pike.....	Mr. R. Fortune, F.Z.S., Harrogate.
Attacus Atlas from India	Mr. W. L. Joy, Headingley.
Euthemisto compressus from Redcar. A crustacean new to Britain	Mr. W. D. Roebuck, F.L S., Leeds.
Larva of New Zealand Swift (*Hepialus virescens*), with fungus attached ...	Mr. Blenkhorn, Knaresbro'.
Nest of Long-tailed Tit (*Acredula rosea*).....	Rev. R. A. Summerfield, B.A., North Stainley, Ripon.
Echinoderms from Devonshire :—(*Astropecten irregularis*, *Ophicoma rosula*, *Ophiura texturata*)	Conchological Society of Great Britain and Ireland.
Fishes, viz. :—*Cobites fossilis*, *Silurus*, *Carassius auratus*, *Zoarces viviparus*	Mr. W. E. Collinge, Mason College, Birmingham.

GEOLOGY.

Actinocrinus, Carboniferous Limestone, Lothersdale	Mr. Thos. Fisher, Carhead, Crosshills.
Calamites, Carboniferous Sandstone, Woodlesford.....	Mr. W. E. Garforth, F.G.S., Halesfield, Normanton.
Specimens of *Poteriocrinus* and *Productus*, Carboniferous Limestone, Wirksworth	Mr. J. Simpson, Hopwood Stone Co., Wirksworth.
Collection of British Trilobites.....	Purchased.

MINERALOGY.

Collection of 187 Minerals from Mr. L. Fletcher, F.R.S., Keeper of the Minerals, British Museum	The Trustees of the British Museum.
Collection of 40 Copper Coins, chiefly Roman	Mr. W. J. Snowdon, Royal Park Mount, Hyde Park.
Portrait (photograph) of Wm. Osburn, Egyptologist	Mr. Hanson, Photographer, Great George St., Leeds.
Copy of the Sheffield Weekly Journal: or, Doncaster Flying-Post, Tuesday, September 13, 1757.....	Prof. Miall, F.R.S., Yorkshire College.

PUBLICATIONS.

Illustrations of Lepidoptera Heterocera, Part IX., 1893	British Museum.
Catalogue of British Echinoderms, 1892.....	British Museum.
Guide to Sowerby's Models of British Fungi, 1893	British Museum.
Fauna Gaskohle und der Kalksteine der Permformation Böhmens.....	Purchased.
"Vagrancy" (pamphlet), by Geo. Paul, F.R.Met.S.	The Author.
"Germs", do. do.	The Author.
Roman Inscriptions in Britain, II., 1890-91, by F. Haverfield, M.A., F.S.A.....	The Author.
British Jurassic Gasteropoda, by W. H. Hudleston, M.A., F.R.S., and Edward Wilson, F.G.S.	The Authors.
Liassic Sections near Bridport (pamphlet), by John F. Walker, M.A., F.G.S.....	The Author.
Contributions to Canadian Micro-Palæontology	The Government.
An Epitomised Review of the Principles and Practice of Maritime Sanitation, by Joseph Holt, M.D. ...	The Author.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-WEEKLY.

Bollettino delle Publicationi Italiane	The Compiler

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	Purchased.
Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions	Purchased.
Proceedings of the Royal Society	The Society.
Proceedings of the Royal Institution of Great Britain, Vol. XIII., Part III., 1893	The Institution.

British Association Report, 1892	The Association.
Greenwich Observations, 1890	The Astronomer-Royal.
Memoirs of the Royal Astronomical Society	The Society.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall, 1891	Purchased.
Monographs of the Palæontographical Society, Vol. XLVI., 1892.....	Purchased.
Proceedings of the Geologists' Association, Vol. XII., Part VIII., 1892	The Association.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Liverpool Geological Society, Session 1891-92 ...	The Society.
Journal of the Liverpool Geological Association	The Association.
Transactions of the Manchester Geological Society, Vol. XXII., Parts VI. and VII., 1892	The Society.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne.....	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philosophical Society	The Society.
Report of the Bradford Philosophical Society, 1892-3	The Society.
Annual Report of the Yorkshire Philosophical Society, 1891	The Society.
Report of the Halifax Literary and Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society, Vol. II., Part XI.	The Society.
Report of the Committee of Leicester Town Museum	The Museum.
Annual Report of the Brighton Town Museum	The Museum.
Annual Report, Middlesex Hospital...	The Hospital.

Annual Report of the Birkenhead Literary and Scientific Society	The Society.
Annual Report and Transactions of the Hull Literary and Philosophical Society	The Society.
Proceedings of the Liverpool Literary and Philosophical Society	The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association	The Association.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society, 4th Series, Vol. VII., No. I., 1892-3	The Society.
Annual Report of the Sheffield Literary and Philosophical Society	The Society.
Annual Report of the Chester Society of Natural Science and Literature	The Society.
Transactions of the Leeds Naturalists' Club and Scientific Association.....	The Association.
Report of the Manchester Museum, Owens College.....	The Curator.
Publications of the Ray Society	Purchased.
Annual Report of the Royal Cornwall Polytechnic Society, 1891	The Society.
Report of Associated Architectural Societies, Vol. XXI., Part I., 1891	The Society.
Journal of the Chester Archæological and Historic Society	The Society.
Geological Record	Purchased.
Transactions of the Yorkshire Naturalists' Union, Parts I.—XVII., 1877-91	The Union.
Proceedings of the Royal Society of Edinburgh, Vol. XVIII., 1890-91... Transactions do. do. Vol. XXXVI., Part III.....	The Society.
Transactions of the Edinburgh Geological Society.....	The Society.

Proceedings of the Glasgow Philosophical Society, Vol. XXIII., 1891-2.	The Society.
Proceedings of the Berwickshire Naturalists' Club, 1890	The Club.
Scientific Proceedings of the Royal Dublin Society, Vol. VII., Parts III. and IV., 1892	The Society.
Scientific Transactions do. Vol. IV., Parts IX.—XIII.	
Transactions of the Royal Irish Academy, Vol. XXIX., Parts XVIII. and XIX., 1892	The Academy.
Proceedings do. do. Vol. II., No. II., 1892	
Journal of the Royal Geological Society of Ireland	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1891-2	The Club.
Publications of the Royal Swedish Academy of Sciences.....	The Academy.
Papers of the Royal University of Norway	The University.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger.....	Royal Danish Society of Sciences.
Bulletin Société Impériale, Moscow ...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deutschen Akademie der Naturforscher	The Academy.
Memoires de la Société d'émulation d'Abbeville	The Society.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien ...	The Society.
Australasian Association Report	The Association.
Journal and Proceedings of the Royal Society of New South Wales, Vols. XXV., XXVI., 1892	The Society.

Records of the Geological Survey of N.S.W., Vol. III., Part II., 1892 ... Memoirs of the Geological Survey of N.S.W.	The Surveyor.
Annual Report and Papers of the Department of Mines, N.S.W., 1891	The Department.
Transactions and Proceedings of the Royal Geographical Society of Australasia (N.S.W. Branch).....	The Society.
Prodromus of the Zoology of Victoria	The Editor.
Victorian Year-Book, Vol. II., 1891-2. By Henry Heylyn Hayter, C.M.G.	The Author.
Records of the Australian Museum, Vol. II., Nos. 3 and 4, 1892 ..... Report of the Trustees of the Australian Museum..... Catalogue of Australian Mammals ...	The Trustees.
Proceedings of the Royal Society of Queensland	The Society.
Transactions and Proceedings of the New Zealand Institute, Vol. XXIV., 1891	The Institute.
Papers and Proceedings of the Royal Society of Tasmania, 1891.....	The Society.
Proceedings and Transactions of the Royal Society of Canada, Vol. IX., 1891	The Society.
Proceedings of the Canadian Institute Annual Report do. Transactions do. Vol. III., Part II., 1892	The Institute.
Proceedings and Transactions of the Nova Scotian Institute of Natural Science	The Institute.
Geological and Natural History Survey of Canada ..... Annual Report and Papers—do. ..... Contributions to Canadian Palæontology	Department of the Interior.
Memorias de la Sociedad Científica (Mexico)	The Society.

"Boletin Mensual" Observatorio Meteorologico-Magnetico, Central de Mexico	The Editor.
Annuario del Observations Astronomico Nacional, Mexico	The Astronomer.
Boletin del Observatorio Astronomico Nacional de Tacubaya	The Observer.
Report of the Muséum National, Rio-de-Janeiro Archivos ditto	Directeur Général.
Cape Meridian Observations Annals of the Cape Observatory, Vol. I., Parts II—IV.	Cape Astronomer-Royal.
Transactions of the American Philosophical Society Proceedings do. Vol. XXX., 1892	The Society.
United States Geological Survey, Annual Report Contributions to American Ethnology, Vol. VII.	The Department.
Report of the Smithsonian Institution, 1890 Smithsonian Miscellaneous Collections Smithsonian Contributions Miscellaneous Publications of the Bureau of Ethnology	The Institution.
Bulletins of United States National Museum Catalogue of Economic Geology and Metallurgy Writings of Dr. Charles Girard Bibliography of the Athapascan Languages Bibliography of the Algonquian Languages Proceedings of United States National Museum Report do. do.	The Museum.
Transactions of the Academy of Science of St. Louis	The Academy.
Proceedings of the Academy of Natural Sciences of Philadelphia, Parts I., II., and III., 1892 Papers do. do.	The Academy.

Proceedings of the American Academy of Arts and Sciences, New Series, Vol. XVIII., 1890-91	The Academy.
Transactions of the Wisconsin Academy of Sciences, Arts, and Letters	The Academy.
Memoirs of the National Academy of Sciences, Washington.....	The Academy.
Proceedings of the Davenport Academy of Natural Science.....	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia ...	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba, 1891-2	The Society.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science	The Union.
Proceedings of the Boston Society of Natural History, U.S.A., Vol. XXV., Parts III. and IV. ..... Memoirs do.	The Society.
Bulletin of the Essex Institute, U.S.A.	The Institute.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College, 1891-2 ..... Annual Report of Harvard College, 1891-2	The College.
Harvard University Catalogue	The University.
Transactions of the Astronomical Observatory of Yale University ... Annual Report do. Report of the President of Yale University ..... Catalogue ditto. 1891-2	The University.
Journal of the Elisha Mitchell Scientific Society, Vol. IX., Part I....	The Society.
Journal and Proceedings of the Hamilton Association, Part VIII., 1891-2	The Association.

LIST OF OFFICERS AND COUNCIL,

1893-4.

OFFICERS.

PRESIDENT	REV. J. H. D. MATTHEWS, M.A.
VICE-PRESIDENTS. . .	T. PRIDGIN TEALE, M.A., F.R.S. REV. CHAS. HARGROVE, M.A.
HONORARY SECRETARIES .	SYDNEY LUPTON, M.A. ARTHUR SMITHELLS, B.Sc.
TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	J. A. NUNNELEY, M.B.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. LOUIS C. MIALL, F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. CHAS. HARGROVE, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	THOMAS SCATTERGOOD.
NATHAN BODINGTON, M.A.	J. H. WICKSTEED, M.Inst.C.E.
T. WALTER HARDING.	J. J. WILLSON.
THOMAS MARSHALL, M.A.	EDMUND WILSON.
RICHARD REYNOLDS, F.I.C.	RICHARD WILSON.

Secretary . . .	W. F. HUSBAND, LL.B.
Curator . . .	HENRY CROWTHER, F.R.M.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1893-4.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	*Aldam, Wm.	
3	Armitage, Robert	Farnley.
4	Arthington, Robert	Headingley.
5	Baines, Herbert S.	Cawood, Apperley Bridge.
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	7, St. Margaret's Terrace, Ilkley.
11	*Brown, James	
31, 62	Brown, Wm. J. (2 shares)	The Mount, Ackworth.
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
26	*Ellershaw, John	
28	Empson, Christopher	Beechwood, Sowerby Bridge.
29, 48	Ford, J. R. (2 shares)	Quarry Dene, Weetwood.

33	Goodman, Benjamin .	Gledhow House.
36-8	Gott, Wm. Henry (3 shares)	Armley House.
61	Greenhow, Wm. T. .	NewtonCottage, Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
27	Hall, William .	Moor Lane, Headingley.
39	Harding, T. R. .	St. Ann's Tower, Headingley.
64	Harding, Thomas Walter .	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Regent Villas, Cumberland Rd.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	Claremont, Leeds.
30	Horsfall, J., M.A., F.R.C.S.	Merivale Lodge, Meyrick Road, Bournemouth, E.
47	Ingham, Constantine .	3, Belgrave Crescent, Scarbro'.
49	Jowitt, Mrs. John .	Harehills, Potternewton.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	Beech Holme, Burley, Leeds.
57	Lupton, Charles .	The Harehills, Roundhay.
32	Lupton, Edward Basil .	Moorlands, Headingley.
53	Lupton, Francis M., M.A.	Rockland, Newton Park.
56	Lupton, Sydney, M.A. .	Grove Cottage, Roundhay.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S. .	13, Belsize Avenue, London, NW.
60	Marshall, John, M.A. .	Derwent Island, Keswick.
66	Marshall, Reginald Dykes	The Cottage, Keswick.
67	Marshall, V. A. E., B.A. .	Monk Coniston, Ambleside.
50	Mason, Charles Letch .	Moorland Terrace.
65	Miall, Prof. Louis C., F.R.S.	Highfield, Ben Rhydding, Leeds.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	
10	Streatfeild, Richard James.	The Rocks, Uckfield, Sussex.

71	*Tatham, George	
52	Taylor, Benjamin	20, Moorland Road.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	*Teale, Mrs.	
74	Tottie, Mrs. John William	The Grange, Bedale.
34, 35	Truro, The Bishop of (2 shares)	Trenython, Par Station.
54	Waite, James Butler	Belvidere, Newton Road.
75	Walker, Edward	32, Springfield Mount.
17	Walker, Reginald Thomas	1, Furnival's Inn, Holborn, London, E.C.
76	Ward, William	32, Hyde Terrace.
12	Wilson, Rev. Benjamin	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund	Denison Hall.
1	Wurtzburg, John Henry	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S.	16, Blenheim Terrace.
113	Bailes, Richard	Ridge Villa, Meanwood Road.
116	*Baines, Frederick	
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
62	Barley, D. H., M.D.	Grove House, Burmantofts.
91	Bedford, James	Woodhouse Cliff.
15	Bilbrough, Wm. Radford	15, Beech Grove Terrace.
3	Birchall, Edward	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G.	31, Park Row.
13	Boothman, David	Rough House, Headingley.
4	Boothroyd, William	Grove Mill, Headingley.
10	Bowling, John	Newstead House, Spencer Place.
5, 6	Brown, G. W. (2 shares)	78, Belsize Park Gardens, Hampstead, London.
89	Buckton, Joshua	Meanwood.
1	Burrell, Benjamin A.	5, Mount Preston.
86	Carter, J. B.	Elm House, Potternewton.

9	*Chadwick, William	
14	Conyers, W. H.	The Hills, Ilkley.
45	Craven, John	3, Beech Grove Terrace.
98	Craven, Joseph	1, Beech Grove Terrace.
104	Crawford, John William	Newton Lane.
26	*Dawson, Thomas	
19	Fairbairn, Sir Andrew	Askham Grange, near York.
118	Flitch, John R.	Chapel-Allerton.
52	Fraser, Mrs. James B.	Claremont, Horsforth.
102-3, 109-10, 114-15	Gott, William Henry (P) (9 shares)	Armley House.
22	Hargrave, Charles	St. Agnesgate House, Ripon.
23	*Hargrave, James	
7	Hargrove, Rev. C., M.A.	De Grey Terrace.
16	Harvey, William	Heathfield, Ilkley.
81	Hatch, S. C.	Clyde House, Westcombe Park Road, Blackheath, London.
44	Hepper, Mrs. J. H.	Suffolk Lodge, Harrogate.
51	Hoggard, Alfred	25, Cavendish Road.
36	*Hudson, Henry	
84	Hummel, Prof. J. J.	Woodsley Road.
120	Ingham, Samuel	Headingley Hall.
96	Jepson, Edward George	20, Springfield Mount.
39	Jowitt, Robert Benson	Elmhurst, Harehills, Leeds.
40	Joy, William Lomas	Headingley.
43	*Kitson, James	
46	Kitson, J. Hawthorn	Elmete Hall, Roundhay.
47	Kitson, Sir Jas., Bart., M.P.	Gledhow Hall.
48	Kitson, Mrs. F. W.	Burley Hill, Leeds.
90	Lawson, Frederick W.	Woodfield, Wood Lane.
50	Leather, Ernest Arthur	Birstwith Hall, Ripley.
53	Lupton, Mrs. Arthur	Headingley.
95	Lupton, Arthur G.	Wellington Street.
21	Lupton, Edgar	Moorlands, Headingley.

8	Lupton, Henry	Lyndhurst, Headingley.
54	Lupton, Joseph	The Elms, Chapel-Allerton.
55	*Lupton, John	
56	Lupton, William Walter	The Grove, Roundhay.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares)	Rockland, Newton Park.
88	McGuire, Thomas	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R.	Regent Villas, Cumberland Road.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D.	Grammar School, Leeds.
27	Maude, William Henry	Middleton Lodge, Leeds.
117	Middleton, Arthur	Calverley Chambers, Victoria Sq.
34	Muir, Prof. James	Hillary Place.
66	Nicholson, A. H.	
30	Nicholson, Marshall	Middleton Hall, near Leeds.
64	*Nickols, Richard	
67	Nunneley, A. G.	9, Beech Grove Terrace.
68	Oxley, James Walker	28, Commercial Street.
93	Palmer, Henry John	55, Albion Street.
28	*Passavant, P. W.	
82	Pearson, John Thomas	The Hall, Melmerby, S.O.
11	Price, Mrs. William N.	Hillary Place.
38	*Ralph, John, M.A.	
33	Ransome, Prof. Cyril, M.A.	3, St. Chad's Villas, Headingley.
69	Reynolds, Richard, F.I.C.	Cliff Lodge, Hyde Park.
72	Rider, James	8, Beech Grove Terrace.
18	Robson, A.W. M., F.R.C.S.	Hillary Place.
105	Ryder, Charles	Gledhow Hill.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
119	Schunck, John Edward	Gledhow Wood, Gledhow.
57	Stringer, John William	Inglebank, Far Headingley.
87	Talbot, Rev. Canon, D.D.	The Vicarage, Hillary Place.
73	Teale, T. P., M.A., F.R.S.	North Grange, Headingley.

74	Teasdale, Washington .	Hyde Park Road, Headingley.
76	*Tennant, Thomas .	
78	*Tetley, F. W. .	
58	Thompson, Chas. F. .	34, College Road, Leeds.
49	Thorp, John Hall .	Far Headingley.
79	Turner, Richard B. .	Oakleigh, Buxton.
80	Wailes, William .	2, Albion Place.
71	Ward, John .	Moor-Allerton House.
111	*Watson, William Henry .	
41	Webb, Joseph S. .	26, Park Row.
97	Weston, Edward .	Newton Park Villa, New Leeds.
42	Whiting, John .	Cliff Road.
83	Wicksteed, J.H., M.Inst.C.E.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M. .	8, East Parade.
85	*Wilson, John .	
17	Wilson, Richard .	28, Commercial Street.
35	Wood, Philip T. .	22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah	29, Meadow Lane.
13	Stratten, Rev. J. R. .	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert .	13, St. John's Terrace.
2	Baines, Talbot, B.A. .	Albion Street.
48	Barran, Rowland H. .	Beechwood, Roundhay.
4	Barwick, J. M. .	Low Hall, Yeadon.
5	Bedford, James E.	Cardigan Road.
7	Best, Mrs. William W. .	31, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	The Yorkshire College.
8	Bolland, W. T. .	Oak Lea, Harrogate.
10	Bousfield, Charles Edward	St. Mary's Mount.

15	Bray, George	Blackman Lane.
72	Brigg, Matthew A.	12, Sholebroke Avenue.
11	Briggs, Riley	Springfield Mount.
75	Brunton, George	Hillary Mount, Woodhouse Lane.
14	Corson, George	Wood Lane, Headingley.
41	Crossley, Thomas	Highfield House, Headingley.
35	Croysdale, Mrs. James	15, Ashwood Villas, Headingley.
16	Denny, T. G.	
32	*Dixon, A. S.	
65	Eddison, Octavius, B.A.	St. Helen's, Adel.
20	Eddison, Robert William	The Manor, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William	
69	Fraser, James B.	8, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, nr. Garforth.
25	Goodman, Prof. John	The Yorkshire College.
12	Hadow, Reginald T.	Bank of England, Leeds.
27	*Hargrave, John	
60	Harland, J. W.	Headingley.
28	Hepper, John	Clareville, Headingley.
30	Hobson, Alfred	Roundhay.
80	Holmes, Joseph	Chemical Works, Crown Street.
81	*Holroyd, James	
31	Illingworth, William	Flower Bank, Burley, Leeds.
33	Irwell, Arthur F.	8, Park Drive, Heaton, Bradford.
6	Jackson, Richard	Beech Villa, Cardigan Road.
34	Jackson, Rt. Hon. W. L., M.P.	Allerton Hall, Leeds.
67	Jefferson, Robert P.	26, Spencer Place.
63	*Jowitt, Miss E. M.	
38	*Lawson, Thomas	
39	*Lawson, John	
88	Legard, Albert G., M.A.	The Briary, Harrogate.
23	Lupton, Prof. Arnold	6, De Grey Road.
44	McCheane, Miss	The Hollies, Headingley.

45	March, George	Oaklands, Scarcroft.
61	Mason, Charles Letch (P).	Park Row.
9	Mathers, John Shackleton.	Hanover House, Leeds.
46	Middleton, Gilbert	Calverley Chambers, Victoria Sq.
36	Morley, R. B.	14, Westfield Terrace, Chapeltown.
49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, Leeds.
70	Nelson, James Henry	Brook House, Sandal, Wakefield.
58	Nicol, W. H.	2, Clarendon Road.
51	Nunneley, Thomas	Wanstead House, Burley, Leeds.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Bramley Grange, Thorner.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Springville, Shaw Lane.
59	Ramsbotham, S. H., M.D.	16, Park Place.
17	Redmayne, John	Grove House, Grosvenor Road.
62	Riley, H. W.	131, Briggate.
73	Rowley, Walter, C.E.	Alder Hill, Meanwood.
19	Simpson, John	20, Call Lane.
68	*Smith, William Farrar	
76	Smithells, Prof. A., B.Sc.	The Yorkshire College.
37	Snowdon, Miss Mary	Ridge House, Leeds.
71	Stables, James	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., B.A.	Ashwood Villas, Headingley.
77	Titley, Mrs. Anthony	Manor House, Victoria Grove.
78	Titley, John A.	Newton Hill, Leeds.
79	Tottie, Mrs. J. W. (P)	The Grange, Bedale.
64	Tweedale, John	12, South Parade.
82	Walker, H. B.	
83	Ward, Edmund	19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S.	Buckingham Ter., Headingley.
90	Ward, William (P)	32, Hyde Terrace.
3	Webb, William Henry	Aire Street.
85	Willson, J. J.	121, Sheepscar Street.
42	Wilson, Mrs. Richard	28, Commercial Street.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Albrecht, Martin	Bleak House, Headingley.
Armistead, Edwin	39, Louis Street.
Armitage, George Frederick, M.A.	52, Boar Lane.
Asquith, John Robert	Bond Place.
Barber, Miss	34, Westbourne Terrace.
Barran, Alfred	Cumberland Road, Headingley.
Barran, Mrs. John, Junr.	Westfield, Chapel-Allerton.
Bartholomew, W. H., C.E.	Ridge Way House.
Beaumont, Prof. R.	14, Regent Park Avenue.
Bedford, Charles S.	Broomleigh, Chapel Lane.
Bentfield, Charles	Shaw Lane, Headingley.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	Wynneholme, Far Headingley.
Brigg, Thomas S.	1, Quebec Street.
Brown, F. H., M.A.	Headingley Hill School.
Buckley, J. C.	Longfield, Headingley.
Bulmer, Charles	Blenheim Lodge.
Bulmer, George Bertram	Calverley Chambers, Victoria Sq.
Butler, Bernard F.	Kepstorn, Kirkstall.
Butler, Edmund	Kirkstall Forge.
Chadwick, Charles M., M.A., M.D.	29, Park Square.
Chorley, R.	Basinghall Street.
Clark, Miss	Potternewton.
Cliff, W.	Western Flatts, Wortley.
Cohen, Dr. J. B.	15, Regent Park Avenue.
Connal, B. M., M.A.	13, Beech Grove Terrace.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Crampton, W. T.	Parcmont, Roundhay.

Croysdale, Charles	13, Shaw Lane, Headingley.
Croysdale, John	Monk Bridge Road, Headingley.
Cuttriss, S. W.	6, Fieldhead Terrace, Camp Rd.
Dale, James M.	Rydal House, Harrogate.
Dalton, George	The Yews, North Hill Road.
Ellison, James Edward	10, De Grey Road.
Firth, William	Woodsley House.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Fox, Rev. J.	Stourton Grange, Hunslet.
Gardner, Wilson	Brookfield Terrace, Headingley.
Gillespie, C. M., M.A.	Lyddon Hall, Virginia Road.
Glover, Frederick, M.A.	16, De Grey Road.
Glover, W. A.	2, Tanshelf Drive, Pontefract.
Green, John H.	Horbury, near Wakefield.
Green, William	1, Tanfield Place.
Griffith, Prof. T. W., M.D.	Park Square.
Hall, Frederick, M.D.	St. Mark's Villas.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	Aysgarth, Roundhay.
Hassé, A.	31, Commercial Street.
Hellier, J. B., M.D.	De Grey Terrace.
Hewetson, H. B.	9, Hanover Square.
Hewson, Thomas	The Hollies, Roundhay.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Holgate, Benjamin, F.G.S.	Cardigan Villa, Grove Lane.
Holroyd, Miss	6, Cavendish Road.
Horsfield, H. K.	14, Oakfield, Headingley.
Ingham, J. P.	14, East Parade.
Jackson, Miss Mary	Well Close Mount.
Josephy, Bernard	25, Hyde Terrace.

Josephy, Henry	5, Beech Grove Terrace.
Kitson, F. J.	Oatlands, Burley, Leeds.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lee, J.	26, Edinburgh Road, Upper Armley.
Lewkowitsch, J., Ph.D.	24, Moorland Road.
Little, F. Buller	Clough House, Chapel-Allerton.
Lupton, E. A.	Horsforth.
Marshall, D. D.	231, Hyde Park Road.
Matthews, Frederick J. A.	Hilly Ridge House, Headingley.
Megson, Albert	Spencer Place, New Leeds.
Mozley, J. R., M.A.	Southleigh, Headingley.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Ashfield, Headingley.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Phillips, John Henry	Hazel House, Methley.
Powell, William	4, Queen Square.
Powell, Miss	Girls' High School, Leeds.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Robinson, Edmund	42, Park Square.
Rogers, Prof. L. J., M.A., Mus.B.	13, Beech Grove Terrace.
Rumboll, Sydney	Hope Villa, Woodhouse Lane.
Sanders, J. A.	5, Blenheim Square.
Sanders, T. W.	Do.
Saville, H.	15, Springfield Place.
Scatcherd, Oliver	Morley, near Leeds.
Slade, Robert	14, Springfield Mount.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Stables, Marshall	Hope Villa, Armley.

Stockdale, T.	Spring Lea.
Stuhlmann, Mrs.	Cavendish House, Cavendish Rd.
Sykes, Arthur	Roundhay Grange.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Teale, Lionel H.	North Grange, Headingley.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Tiffany, George John	118, Kirkgate.
Titterington, Rev. W. T.	Fulneck, near Leeds.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, James	Newton Park.
Walker, George	Do.
Watson, Charles	Burton Grange, Far Headingley.
Whitham, T.	Bramhope.
Willans, J. W.	The Woodlands, Kirkstall.
Wood, John	11, St. Mark's Terrace.
Wood, Robert H.	15, Bainbrigge Road.
Wray, Robert	40, Brunswick Street.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Bleak House, Headingley.
Armistead, Mrs.	39, Louis Street, New Leeds.
Atkinson, Mrs. E.	16, Blenheim Terrace.
Baines, Miss E. L.	Apperley Bridge.
Barber, Miss Ethel	34, Westbourne Terrace.
Barran, Mrs. John	Chapel-Allerton Hall.
Barran, Miss Ruth	Westfield, Chapel-Allerton.
Beaumont, Mrs. R.	14, Regent Park Avenue.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.

Bentfield, Mrs. C.	Shaw Lane, Headingley.
Birch, Mrs.	16, De Grey Terrace.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	Wynneholme, Far Headingley.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brigg, Mrs. T. S.	Cromer Terrace.
Brunton, Miss	Hillary Mount.
Bulmer, Miss	Blenheim Lodge.
Bulmer, Miss S. E.	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Connon, Mrs. J. W.	Park Row.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Miss Louisa	Do.
Crampton, Charles	Do.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. C.	13, Shaw Lane.
Croysdale, Mrs. J.	Heathfield, Monk Bridge Road.
Croysdale, Miss	Do. do.
Dalton, Mrs. G.	The Yews, North Hill Road.
Day, Miss	Mrs. Stuhlmann, Cavendish Rd.
Ellison, Miss	10, De Grey Road.
Fox, Mrs. J.	Stourton Grange, Hunslet.
Glover, Miss	16, De Grey Road.
Glover, Miss Mary	Do.
Green, Miss	1, Tanfield Place.
Green, Miss Ethel	Do.
Hall, Miss	St. Mark's Villas.
Hallilay, Mrs.	28, Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hartnell, Mrs. Wilson	Aysgarth, Roundhay.
Hassé, Mrs.	31, Commercial Street.
Hassé, Eric	Do.
Hepper, Miss M. E.	Clareville, Headingley.

Hewetson, Mrs. H. B.	9, Hanover Square.
Hewson, Mrs. T.	The Hollies, Roundhay.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirsch, Miss Annie	Do.
Hogg, Mrs. Henry	Mr. Hartley, Blenheim Terrace.
Holgate, Mrs. B.	Regent House, Headingley.
Holroyd, Miss G.	6, Cavendish Road.
Horsfield, Mrs. H. K.	14, Oakfield, Headingley.
Jackson, Miss	Allerton Hall, Leeds.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Ernest H.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, H.	Do.
Kitson, Mrs. F. J.	Oatlands, Burley, Leeds.
Lawson, Miss	Bramhope.
Little, Mrs. F. Buller	Clough House, Chapel-Allerton.
Little, Miss Edith	Do. do.
Marshall, Mrs. D. D.	231, Hyde Park Road.
Mathers, Miss	Hanover House.
Morley, Mrs.	14, Westfield Terrace, Chapeltown.
Mozley, Mrs.	Southleigh, Headingley.
Mozley, Miss	Do. do.
Myers, Miss	Mrs. Stuhlmann, Cavendish Rd.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Nicholson, Mrs. J. C.	Ashfield, Headingley.
Nicholson, Miss	Do. do.
Nussey, Miss	Potternewton Hall.
Nussey, Mrs.	Springville, Shaw Lane.
Nussey, Miss E.	Do. do.
Nussey, Miss M.	Do. do.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss	Mrs. Stuhlmann, Cavendish Rd.

Ramsbotham, Miss	16, Park Place.
Ransome, Mrs.	3, St. Chad's Villas, Headingley.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	Cliff Road.
Rickards, Miss	Wortley.
Robson, Mrs. A. W. Mayo	Hillary Place.
Rumboll, Mrs.	Hope Villa, Woodhouse Lane.
Ryder, Miss A. E.	Gledhow Hill.
Ryder, Miss E. I.	Do.
Ryder, Miss Louisa	Do.
Sanders, Miss	5, Blenheim Square.
Saville, Miss S. E.	15, Springfield Place.
Scatcherd, Mrs. O.	Morley.
Scattergood, Miss	41, Park Square.
Slade, Mrs. R.	14, Springfield Mount.
Slade, R. H.	Do.
Somers, Mrs.	48, Woodhouse Lane.
Stables, Mrs. M.	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Mrs. T.	Spring Lea.
Stroud, Mrs. W.	Ashwood Villas.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Teale, Mrs.	52, Boar Lane.
Teale, Miss	North Grange, Headingley.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thornley, Miss	Mr. Illingworth, Flower Bank.
Thornley, Miss M.	Mr. Tetley, Cardigan Road.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.

Watson, Mrs. Charles	.	Burton Grange, Far Headingley.
Watson, Miss	.	52, Boar Lane.
Wicksteed, Miss C.	.	Mr. E. A. Lupton, Horsforth.
Willson, Miss Emilie Dorothy	.	121, Sheepscar Street.
Willson, Miss Margaret	.	Do.
Wood, Miss	.	11, St. Mark's Terrace.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

W. Boyne, F.S.A.

Sir Frederick J. Bramwell, F.R.S., M. Inst. C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

George Lane Fox, Bramham Park.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S., Stoke Bishop, Bristol.

Wm. Hartley, Durban, Port Natal.

The Right Rev. the Lord Bishop of Hereford, The Palace, Hereford.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Clements R. Markham, C.B., F.R.S., F.L.S., Sec. R.G.S., &c., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

The Right Rev. the Lord Bishop of Nottingham, Leasingham, Sleaford.

C. C. Oxley, Minster House, Ripon.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., 21, Charles Street, Berkeley Square, London.

T. Wemyss Reid, 26, Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., Errington, Clapham Park, London, S.W.

Henry Seebohm, F.L.S., F.Z.S., 6, Tenterden Street, Hanover Square, London, W.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

John Robert Tennant, Kildwick Hall.

Prof. T. E. Thorpe, Ph.D., F.R.S., Normal School of Science, South Kensington.

Edward Harry Woods, Rosario, Argentine Republic.

Dec. 18

A. Biddle

LEEDS

Philosophical and Literary Society.

THE ANNUAL REPORT

For 1893-4.

103

THE

SEVENTY-FOURTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION 1893-4.

READ AT THE ANNUAL MEETING, MAY 1st, 1894.

LEEDS:
JOWETT & SOWRY, PRINTERS AND LITHOGRAPHERS, 78, ALBION STREET.
1894.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SEVENTY-FOURTH SESSION.

During the Seventy-fourth Session of the Society the General Meetings have been well attended, and the interest in the Lectures has been maintained.

The thanks of the Society are due to Mr. W. H. St. John Hope, Prof. A. Smithells, Dr. Thorpe, Dr. Eddison, and Colonel Harding, who gave their services gratuitously. The List of Lectures was as follows :—

1.—"Kirkstall Abbey; its plan and arrangements, and the means being taken to preserve it." By W. H. St. John Hope, M.A. *Oct. 17th, 1893.*

2.—"A Journey through Western Tibet." By Mrs. Bishop, F.R.G.S. *Nov. 7th, 1893.*

3.—"The Interstellar Ether." By Prof. Oliver Lodge, D.Sc., F.R.S. *Nov. 21st, 1893.*

4.—"Jonathan Swift." By Rev. Canon Ainger, LL.D. *Dec. 5th, 1893.*

5.—"Flame." By Prof. A. Smithells, B.Sc. *Dec. 19th, 1893.*

6.—"The Appreciation of Music." By W. H. Hadow, M.A., Mus. Bac. *Jan. 9th, 1894.*

7.—"The Armies of to-day." By Major G. F. R. Henderson. *Jan. 16th, 1894.*

8.—"Matabeleland, and our position in South Africa." By Archibald R. Colquhoun. *Jan. 23rd, 1894.*

9.—"The Scientific Work of Galileo." By Prof. J. A. Fleming, M.A., D.Sc., F.R.S. *Feb. 6th, 1894.*

10.—"The Recent Solar Eclipse." By Prof. T. E. Thorpe, Ph.D., F.R.S. *Feb. 20th, 1894.*

11.—"Climbing and Travel among the great mountains of Asia." By W. M. CONWAY. *March 6th, 1894.*

12.—"Genius and Sanity." By J. E. EDDISON, M.D. *March 20th, 1894.*

13.—"General Buonaparte." By Colonel T. W. HARDING. *April 3rd, 1894.*

14.—"Mrs. Browning." By ARTHUR SIDGWICK, M.A. *April 17th, 1894.*

During the Christmas Holidays the Curator delivered three Lectures, followed by practical demonstrations, on "Jelly-fishes and Corals," "Shells and their Inmates," and "Feathers and Wings."

In the course of May and June Miss Simpson again delivered six Object Lessons on Elementary Natural History. Both these courses were successful and well attended.

The number of Members and Subscribers is as follows:—

Original Proprietary Members (78 shares)	62
New Proprietary Members (121 shares)	85
Ordinary Members	2
New Ordinary Members	69
Annual Subscribers of £1 1s.	121
Annual Subscribers of 7s. 6d.	126
Total	465

The shares of nine Original, of twelve New Proprietary, and of eight New Ordinary Members deceased, have not been transferred.

23,848 visitors have paid for admission to the Museum.

A case has been arranged to illustrate the formation of feathers, and another to show the regional distribution and classification of mollusca.

Arrangements have been made for receiving records of sunshine from Harrogate, Grange, Bowness, Keswick, Buxton, and Falmouth. The means are thus afforded of making valuable comparisons with the results obtained in our district.

The thanks of the Society are due to the Rev. W. Smith, of Shadwell, for the gift of a case of stuffed birds; to the Royal Swedish Academy for a valuable series of books; and to the Trustees of the British Museum for valuable catalogues of portions of their collections both at Bloomsbury and at Cromwell Road.

It is gratifying to find that, during the past year, the use of the Museum by Students has largely increased. Thirty visits were paid by classes in Biology and Geology of the Yorkshire College; two visits by classes from Board Schools; thirty-four visits by specialists. A case of Flint Implements was specially arranged for 27 University Extension Students from East Leeds, under the direction of the University Lecturer. Selected specimens were lent on ten occasions to the Yorkshire College, on two occasions to University Extension Lecturers, and on three occasions to the Leeds Naturalists' Field Club.

During the past year the Society has lost three Honorary Members by death.

The Right Rev. Edward Trollope, Bishop Suffragan of Nottingham, became Rector of Leasingham in 1843, and published many works on local antiquarian subjects between 1854-80. He was elected an Honorary Member in 1858, and read three Papers before the Society—"The Captivity of John, King of France," 1858; "Mazes and Labyrinths," 1858; "Norman Sculptures of Lincoln Cathedral," 1867.

Mr. W. Boyne, F.S.A., author of "Tokens of the 17th Century," and "The Yorkshire Library," &c., became a Proprietary Member in 1846, and was elected an Honorary Member in 1853. He read Papers before the Society on "Numismatology," 1848; "Antiquities of Cornwall," 1850.

Mr. John Robert Tennant was elected an Honorary Member in 1859. By his kind permission Dowkerbottom Cave was investigated at the cost of the Society, with the result that many human and canine crania and other fossils were added to the Museum.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1893.

1893.	Mean Temperature.	Mean Height of Barometer (inches).	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	37·2	29·874	·71	·43
February...	39·6	29·454	3·03	2·47
March	44·8	29·901	·29	·36
April	50·2	30·016	·87	1·13
May...	55·1	29·762	1·90	1·67
June...	59·2	29·809	1·74	1·35
July	60·4	29·697	4·41	4·42
August	63·8	29·750	2·22	1·91
September	55·2	29·560	1·52	1·70
October	48·0	29·594	2·25	2·11
November	40·8	29·745	1·45	1·54
December	41·9	29·647	2·55	3·09

Mean monthly temperature—49·6°.

Mean monthly height of the barometer—29·734 inches.

Total rainfall for the year—Museum 22·94 inches; Woodhouse Cliff 22·18 inches. Average rainfall at the Museum for the ten years 1884-1893—23·53 inches.

Greatest degree of heat, indicated by the thermometer in the shade—87·5° on August 18th ; minimum—18° on January 5th.

Greatest barometric pressure—30·53 inches on December 30th, the temperature of the mercury being 47°; least pressure—28·69 inches on December 20th, the temperature of the mercury being 48°.

Greatest fall of rain (during 24 hours)—1·46 inches on July 31st.

The Bench Mark at the corner of the Philosophical Hall is 131·8′ above the Ordnance datum, and ·8′ above the pavement. The cistern of the barometer is 12·8′ the thermometers are 42′, and the rain-gauge is 45′ above the bench mark.

The Hall is situated at 1° 32′ 45″ or 6 min. 11 sec. W., and 53° 47′ 51″ N., and hence $g/g_{45°}$ is 1·000774. Taking the standard height of the barometer to be 30″, and the standard temperature to be 62° F, the height of the homogeneous atmosphere is 27860′. To find the height of a barometer at sea level equivalent to a reading of H″, at a temperature of t° F. different from 62° F., add to the reading H″ (.0054$\mp$.00001t).

SUNSHINE AT LEEDS IN 1893.

The observations were made by Jordan's Photographic Sunshine Recorder at the following stations:—

1. The Museum, situate in the centre of the city; elevation above the sea, 137 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the city; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the city; elevation, 475 feet; on the fringe of the city.
4. Union Infirmary, Burmantofts, 1 mile from the centre of the city; elevation, 200 feet; industrial district.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible duration.
JANUARY	1	4·10	1·6
	2	23·50	9·2
	3	44·30	17·1
	4	22·0	8·4
FEBRUARY	1	32·20	11·6
	2	39·50	14·3
	3	54·30	19·6
	4	44·40	16·1
MARCH	1	114·0	31·1
	2	136·10	37·1
	3	158·30	43·2
	4	147·30	40·2
APRIL	1	179·30	43·3
	2	215·35	53·0
	3	238·30	57·1
	4	230·30	56·4
MAY	1	154·20	32·0
	2	175·25	36·3
	3	188·30	39·1
	4	173·0	35·8
JUNE	1	150·35	30·4
	2	166·20	33·6
	3	182·0	36·8
	4	168·50	33·1
JULY	1	136·10	27·4
	2	158·0	31·8
	3	157·40	31·7
	4	155·30	31·3
AUGUST	1	199·40	44·5
	2	122·30	49·6
	3	227·20	50·7
	4	195·20	43·5
SEPTEMBER	1	112·0	29·7
	2	126·50	33·7
	3	138·20	36·7
	4	114·40	30·0
OCTOBER	1	94·0	28·6
	2	108·10	32·9
	3	121.20	37·0
	4	90·50	27·6
NOVEMBER	1	30·40	11·6
	2	39·40	15·0
	3	39·10	14·8
	4	34·30	13·0
DECEMBER	1	16·0	6·6
	2	20·20	8·3
	3	36·10	14·9
	4	16·30	6·8

SUMMARY FOR THE YEAR.

	Hours recorded. Hours.	M.	Difference from mean in hours.	Per cent. of possible duration.
Museum ..	1,223	15	+341	27·4
Woodhouse Cliff	1,436	40	+316	32·2
Lawnswood ..	1,586	30	+351	35·6
Burmantofts ..	1,393	50	+292	31·3

31·6 per cent. mean for 1893.
27·5 ,, ,, 1892.
22·2 ,, ,, 1891.
24·4 ,, ,, 1890.
20·7 ,, ,, 1889.
19·9 ,, ,, 1888.
28·0 ,, ,, 1887.
24·9 ,, ,, seven years.

The Meteorological Office publishes the following records of sunshine for 1893, as observed at stations taken as representing specified districts:—

	Hours recorded.	Difference from mean.	Percentage of possible duration.
Scotland, N. (Stornoway, &c.)	993	—160	23
,, E. (Aberdeen, Marchmont)	1,373	+ 28	31
,, W. (Glasgow; Douglas, Isle of Man) ..	1,541	+219	35
England, N.E. (Durham, York)	1,558	+318	35
,, N.W. (Stonyhurst, Blackpool, Llandudno)	1,499	+192	34
,, Mid. (Cirencester, Oxford, &c.)	1,715	+368	39
,, S. (London, Hastings, Southampton, &c.)	1,875	+413	43
,, E. (Hillingdon, Geldestone, Cambridge)	1,831	+322	42
,, S.W. (Pembroke, Falmouth, Plymouth, &c.)	1,964	+378	45
Ireland, N. (Armagh, Markree Castle)	1,380	+148	31
,, S. (Dublin, Parsonstown, Valencia) ..	1,532	+ 94	35
Channel Islands (Jersey)	2,300	+438	52

SUMMARY.

37.0 per cent. mean for United Kingdom, 1893.
35·2 ,, ,, ,, 1892.
32·6 ,, ,, ,, 1891.
30·7 ,, ,, ,, 1890.
29·2 ,, ,, ,, 1889.
27·5 ,, ,, ,, 1888.
35·6 ,, ,, ,, 1887.
32·5 ,, ,, ,, 7 years.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the year 1893-4.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1893		—		0	11	3
,, Balance at Bank		—		17	18	4
,, Annual Subscriptions, viz.:—						
78 New Proprietary Members, at 21s. ...	81	18	0			
2 Original Ordinary ,, 42s. ...	4	4	0			
60 New Ordinary ,, 21s. ...	63	0	0			
120 Annual Subscribers, at 21s.	126	0	0			
126 Annual Subscribers, at 7s. 6d. ...	47	5	0			
,, Arrears	7	1	0			
				329	8	0
,, Rent, viz.:—						
Cellars	40	0	0			
Lecture Room	186	1	0			
				226	1	0
,, Receipts from Visitors to Museum ...				99	7	4
,, Sale of Guides	3	9	6			
,, Bank Interest	0	15	0			
,, Sundries	4	3	0			
				8	7	6
,, Sale of Electric Light Plant, less Commission... ...				40	10	0
,, Sale of Share				5	0	0
				£727	3	5

PAYMENTS.	£	s.	d.	£	s.	d.
By Repairs and Alterations	16	15	5			
,, Rates and Taxes	4	12	11			
,, Fire Insurance	12	10	0			
,, Coals, &c.	26	9	9			
,, Gas	18	11	9			
,, Cleaning	11	17	4			
				90	17	2
,, Salaries and Wages	307	5	0			
,, Fee to Auditor	2	2	0			
				309	7	0
,, Collections, Library, and Scientific Apparatus... ...				35	1	1
,, Postages	9	15	1			
,, Advertising and Printing	32	17	7			
,, Lectures	110	9	3			
,, Sundries	13	6	4			
				166	8	3
,, Electric Light Supply				10	19	8
,, Electric Light Installation, renewal and connecting with Main				36	19	0
,, Balance at Bank				75	13	11
,, ,, in hand				1	17	4
				£727	3	5

I have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 26th, 1894.

CHAS. BEEVERS,
CHARTERED ACCOUNTANT.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1893-4.

ZOOLOGY.

Case of Birds:—Darter (*Plotus*); Plantain-eater (*Turacus purpureus*); Red-legged Partridge (*Caccabis rufa*); Great Spotted Cuckoo (*Cuculus glandarius*); &c.	Rev. W. Smith, The Vicarage, Shadwell.
Snowy Owl (*Nyctea scandiaca*) and shade	Mr. Reginald T. Hadow, Leeds.
Collection of British Reptiles	Mr. W. Denison Roebuck, F.L.S., Leeds.
Specimens of *Columbella Kitchingi*, Sowby, Capetown, S. Africa	Mr. Langley Kitching, J.P., Rosenhurst, Bewdley.

METALLURGY.

Specimen of Nitro-cyanide of Titanium	Mr. Ingleby, Leeds (per Mr. J. Bedford).

Copy of the Leeds Mercury, Saturday, June 4th, 1825	Mr. W. H. Settle, Leeds.

PUBLICATIONS.

Catalogue of Snakes, Vol. I. ..... Catalogue of Birds, Vols. XXI. & XXII. Catalogue of Madreporaria, Vol. I. ... Catalogue of Spanish MSS., Vol. IV. Catalogue of Romances, Vol. II.	The Trustees of the British Museum.
Three Plates of Contacts of Rocks ...	Geological Survey of Canada.
The Great Trigonometrical Survey of India, Vol. XV., 1893	Secretary of State in Council of India.
On the Brachiopoda recently discovered in the Yorkshire Oolites, by Mr. J. F. Walker, M.A., F.G.S.	The Author.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-WEEKLY.

Bollettino delle Publicationi Italiane	The Compiler.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	Purchased.
Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions	Purchased.
Proceedings of the Royal Society	The Society.
Proceedings of the Royal Institution of Great Britain, Vol. XIV., Part I.	The Institution.

Publications of the Ray Society, Vol. IV., 1892	Purchased.
British Association Report	The Association.
Greenwich Observations	The Astronomer-Royal.
Memoirs of the Royal Astronomical Society	The Society.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall, 1892	Purchased.
Monographs of the Palæontographical Society, Vol. XLVII., 1893	Purchased.
Proceedings of the Geologists' Association	The Association.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Liverpool Geological Society	The Society.
Journal of the Liverpool Geological Association	The Association
Transactions of the Manchester Geological Society	The Society.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philosophical Society	The Society.
Report of the Bradford Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society, 1893	The Society.
Report of the Halifax Literary and Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society, Vol. III. to Part VI.	The Society.
Report of the Committee of Leicester Town Museum	The Museum.
Annual Report of the Brighton Town Museum	The Museum.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-WEEKLY.

Bollettino delle Publicationi Italiane	The Compiler.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	Purchased.
Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions	Purchased.
Proceedings of the Royal Society	The Society.
Proceedings of the Royal Institution of Great Britain, Vol. XIV., Part I.	The Institution.

Publications of the Ray Society, Vol. IV., 1892	Purchased.
British Association Report	The Association.
Greenwich Observations	The Astronomer-Royal.
Memoirs of the Royal Astronomical Society	The Society.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall, 1892	Purchased.
Monographs of the Palæontographical Society, Vol. XLVII., 1893	Purchased.
Proceedings of the Geologists' Association	The Association.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Liverpool Geological Society	The Society.
Journal of the Liverpool Geological Association	The Association
Transactions of the Manchester Geological Society	The Society.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philosophical Society	The Society.
Report of the Bradford Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society, 1893	The Society.
Report of the Halifax Literary and Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society, Vol. III. to Part VI.	The Society.
Report of the Committee of Leicester Town Museum	The Museum.
Annual Report of the Brighton Town Museum	The Museum.

Annual Report, Middlesex Hospital...	The Hospital.
Annual Report of the Birkenhead Literary and Scientific Society	The Society.
Annual Report and Transactions of the Hull Literary and Philosophical Society	The Society.
Proceedings of the Liverpool Literary and Philosophical Society	The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association	The Association.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society, 4th Series, Vol. VIII., No. I., 1893-4	The Society.
Annual Report of the Sheffield Literary and Philosophical Society	The Society.
Annual Report of the Chester Society of Natural Science and Literature	The Society.
Transactions of the Leeds Naturalists' Club and Scientific Association.....	The Association.
Report of the Manchester Museum, Owens College.....	The Curator.
Journal of the Royal Institution of Cornwall, Vol. XI., Part II., and 9 other Parts	The Institution.
Annual Report of the Royal Cornwall Polytechnic Society, 1892	The Society.
Report of Associated Architectural Societies	The Society.
Journal of the Chester Archæological and Historic Society	The Society.
Geological Record	Purchased.
Transactions of the Yorkshire Naturalists' Union	The Union.

Proceedings of the Royal Society of Edinburgh, Vol. XIX., 1891-92..... Transactions do. do. Vol. XXXVII., Parts I. and II. ...	The Society.
Transactions of the Edinburgh Geological Society.....	The Society.
Proceedings of the Glasgow Philosophical Society, Vol. XXIV., 1892-3 .	The Society.
Proceedings of the Berwickshire Naturalists' Club, 1893	The Club.
Scientific Proceedings of the Royal Dublin Society..... Scientific Transactions do.	The Society.
Transactions of the Royal Irish Academy ..... Proceedings do. do.	The Academy.
Journal of the Royal Geological Society of Ireland	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, Vol. III., Part VI.	The Club.
Publications of the Royal Swedish Academy of Sciences, 27 Parts.....	The Academy.
Papers of the Royal University of Norway	The University.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger.....	Royal Danish Society of Sciences.
Bulletin Société Impériale, Moscow ...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deutschen Akademie der Naturforscher	The Academy.
Memoires de la Société d'émulation d'Abbeville	The Society.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien ...	The Society

Memoirs of the National Academy of Sciences, Vol. VI., 1893	The Academy.
Australasian Association Report, Vol. IV.....	The Association.
Journal and Proceedings of the Royal Society of New South Wales	The Society.
Records of the Geological Survey of N.S.W., Vol. III., Part IV., 1893 ... Memoirs of the Geological Survey of N.S.W.	The Surveyor.
Annual Report and Papers of the Department of Mines and Agriculture, N.S.W., 1892 ..... The Australian Language.....	The Department.
Transactions and Proceedings of the Royal Geographical Society of Australasia (N.S.W. Branch).....	The Society.
Prodromus of the Zoology of Victoria	The Editor.
Records of the Australian Museum Report of the Trustees of the Australian Museum..... Catalogue of Australian Mammals ...	The Trustees.
Proceedings of the Royal Society of Queensland	The Society.
Transactions and Proceedings of the New Zealand Institute, Vol. XXV., 1892	The Institute.
Papers and Proceedings of the Royal Society of Tasmania, 1892.....	The Society.
Proceedings and Transactions of the Royal Society of Canada, Vol. X., 1892	The Society.
Proceedings of the Canadian Institute Annual Report do. Transactions do. Vol. IV., Part I., 1894.....	The Institute.
Proceedings and Transactions of the Nova Scotian Institute of Natural Science	The Institute.

Journal and Proceedings of the Hamilton Association	The Association.
Geological and Natural History Survey of Canada ..... Annual Report and Papers—do. ..... Contributions to Canadian Palæontology ..... Catalogue of Stratigraphical Collection of Canadian Rocks, at the World's Columbian Exhibition, Chicago, 1893	Department of the Interior.
Memorias de la Sociedad Científica (Mexico)	The Society.
"Boletin Mensual" Observatorio Meteorologico-Magnetico, Central de Mexico	The Editor.
Annuario del Observations Astronomico Nacional, Mexico	The Astronomer.
Boletin del Observatorio Astronomico Nacional de Tacubaya	The Observer.
Report of the Muséum National, Rio-de-Janeiro ..... Archivos ditto.....	Directeur Général.
Cape Meridian Observations ..... Annals of the Cape Observatory	Cape Astronomer-Royal.
Transactions of the American Philosophical Society ..... Proceedings do. Vol. XXXI.....	The Society.
United States Geological Survey, Annual Report, Parts I. and II. ... Contributions to American Ethnology.	The Department.
United States Department of Agriculture:— Prairie Ground Squirrels of the Mississippi Valley ..... The Death Valley Expeditions..... Hawks and Owls of the United States	The Department.

Report of the Smithsonian Institution, 1891 ..... Smithsonian Miscellaneous Collections Smithsonian Contributions ..... Miscellaneous Publications of the Bureau of Ethnology	The Institution.
Bulletins of United States National Museum ..... Bibliography of the Salishan Languages Bibliography of the Chinookan Languages ..... Proceedings of United States National Museum ..... Report do. do.	The Museum.
Transactions of the Academy of Science of St. Louis	The Academy.
Proceedings of the Academy of Natural Sciences of Philadelphia, Part I., 1893..... Papers do. do.	The Academy.
Proceedings of the American Academy of Arts and Sciences, New Series, Vol. XIX., 1891-92	The Academy.
Transactions of the Wisconsin Academy of Sciences, Arts, and Letters	The Academy.
Memoirs of the National Academy of Sciences, Washington.....	The Academy.
Proceedings of the Davenport Academy of Natural Science.....	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia ...	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba, 1893	The Society.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science	The Union.

Proceedings of the Boston Society of Natural History, U.S.A., Vol. XXVI., Part I..... Memoirs do. Geology of the Boston Basin, Vol. I., Pt. Nantasket and Cohasset	The Society.
Bulletins of the Essex Institute, U.S.A.	The Institute.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College ..... Annual Report of Harvard College, 1892-3	The College.
Harvard University Catalogue	The University.
Transactions of the Astronomical Observatory of Yale University ... Annual Report do. Report of the President of Yale University ..... Catalogue ditto ditto	The University.
Journal of the Elisha Mitchell Scientific Society, 1893, Part I. ...	The Society.

LIST OF OFFICERS AND COUNCIL,

1894-5.

OFFICERS.

PRESIDENT	REV. CHAS. HARGROVE, M.A.
VICE-PRESIDENTS. . .	REV. J. H. D. MATTHEWS, M.A. NATHAN BODINGTON, M.A.
HONORARY SECRETARIES .	SYDNEY LUPTON, M.A. ARTHUR SMITHELLS, B.Sc.
TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	J. A. NUNNELEY, M.B.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. LOUIS C. MIALL, F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. CHAS. HARGROVE, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	T. P. TEALE, M.A., F.R.S.
T. WALTER HARDING.	J. H. WICKSTEED, M.Inst.C.E.
THOMAS MARSHALL, M.A.	J. J. WILLSON.
RICHARD REYNOLDS, F.I.C.	EDMUND WILSON.
THOMAS SCATTERGOOD.	RICHARD WILSON.

Secretary . . .	W. F. HUSBAND, LL.B.
Curator . . .	HENRY CROWTHER, F.R.M.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1894-5.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	*Aldam, Wm.	
3	Armitage, Robert	Farnley.
4	Arthington, Robert	Headingley.
49	Baines, Mrs. Arthur	The Heath, Adel.
5	Baines, Herbert S.	Cromer Hall, Leeds.
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	Broomfield Crescent, Headingley.
11	*Brown, James	
31, 62	Brown, Wm. J. (2 shares)	The Mount, Ackworth.
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
26	*Ellershaw, John	
28	Empson, Christopher	Beechwood, Sowerby Bridge.

29, 48	Ford, J. R. (2 shares) .	Quarry Dene, Weetwood.
33	Goodman, Benjamin .	Gledhow House.
36-8	Gott, Wm. Henry (3 shares)	Armley House.
61	Greenhow, Wm. T. .	NewtonCottage,Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
27	Hall, William .	Moor Lane, Headingley.
39	Harding, T. R. .	St. Ann's Tower, Headingley.
64	Harding, Thomas Walter .	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Regent Villas, Cumberland Rd.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	
30	Horsfall, J., M.A., F.R.C.S.	Merivale Lodge, Meyrick Road, Bournemouth, E.
47	Ingham, Constantine .	3, Belgrave Crescent, Scarbro'.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	Beech Holme, Burley, Leeds.
57	Lupton, Charles .	The Harehills, Roundhay.
32	Lupton, Edward Basil .	Moorlands, Headingley.
53	Lupton, Francis M., M.A.	Rockland, Newton Park.
56	Lupton, Sydney, M.A. .	Grove Cottage, Roundhay.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	*Marshall, Arthur, F.G.S. .	
60	Marshall, John, M.A. .	Derwent Island, Keswick.
66	Marshall, Reginald Dykes	The Cottage, Keswick.
67	Marshall, V. A. E., B.A. .	Monk Coniston, Ambleside.
50	Mason, Charles Letch .	Moorland Terrace.
65	Miall, Prof. Louis C., F.R.S.	5, West View, Ilkley.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	
10	Streatfeild, Richard James.	The Rocks, Uckfield, Sussex.

71	Tatham, Miss	Springfield Mount.
52	Taylor, Benjamin .	20, Moorland Road.
72	Teale, Thomas Greenwood	36, Trinity Street.
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	
34, 35	Truro, The Bishop of (2 shares)	Trenython, Par Station.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
17	Walker, Reginald Thomas	1, Furnival's Inn, Holborn, London, E.C.
76	Ward, William .	12, Bank Street.
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	Denison Hall.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S. .	16, Blenheim Terrace.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	*Baines, Frederick .	
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
62	Barley, D. H., M.D. .	Grove House, Burmantofts.
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford .	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	31, Park Row.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
10	Bowling, John .	Newstead House, Spencer Place.
5, 6	Brown, G. W. (2 shares) .	78, Belsize Park Gardens, Hampstead, London.
89	Buckton, Joshua .	Meanwood.
1	Burrell, Benjamin A. .	5, Mount Preston.
86	Carter, J. B. .	Elm House, Potternewton.

9	*Chadwick, William	
14	Conyers, W. H.	The Hills, Ilkley.
45	Craven, John	3, Beech Grove Terrace.
98	Craven, Joseph	1, Beech Grove Terrace.
104	Crawford, John William	Newton Lane.
26	Dawson, Oswald	Albion Walk Chambers, Leeds.
19	Fairbairn, Sir Andrew	Askham Grange, near York.
118	Flitch, John R.	Chapel-Allerton.
52	Fraser, Mrs. James B.	Claremont, Horsforth.
102-3, 106-10, 114-15	Gott, William Henry (P) (9 shares)	Armley House.
22	Hargrave, Charles	St. Agnesgate House, Ripon.
23	*Hargrave, James	
7	Hargrove, Rev. C., M.A.	De Grey Terrace.
16	Harvey, William	Heathfield, Ilkley.
81	Hatch, S. C.	Clyde House, Westcombe Park Road, Blackheath, London.
44	Hepper, Mrs. J. H.	Suffolk Lodge, Harrogate.
51	Hoggard, Alfred	25, Cavendish Road.
36	*Hudson, Henry	
84	Hummel, Prof. J. J.	152, Woodsley Road.
120	Ingham, Samuel	Headingley Hall.
96	Jepson, Edward George	20, Springfield Mount.
39	Jowitt, Robert Benson	Elmhurst, Harehills, Leeds.
40	Joy, William Lomas	Headingley.
43	*Kitson, James	
46	Kitson, J. Hawthorn	Elmete Hall, Roundhay.
47	Kitson, Sir Jas., Bart., M.P.	Gledhow Hall.
48	Kitson, Mrs. F. W.	Burley Hill, Leeds.
90	Lawson, Frederick W.	Woodfield, Wood Lane.
50	Leather, Ernest Arthur	Birstwith Hall, Ripley.
53	Lupton, Mrs. Arthur	Headingley.
95	Lupton, Arthur G.	Wellington Street.
8	Lupton, Henry	Lyndhurst, Headingley.

54	*Lupton, Joseph .	
55	Lupton, Mrs. John .	Moorlands, Headingley.
21	Lupton, Oliver .	Shireoak Road, Headingley.
56	Lupton, William Walter .	The Grove, Roundhay.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares) .	Rockland, Newton Park.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Regent Villas, Cumberland Road.
60	Marshall, Thomas, M.A. .	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D. .	Grammar School, Leeds.
27	Maude, William Henry .	Middleton Lodge, Leeds.
117	Middleton, Arthur .	Calverley Chambers, Victoria Sq.
34	Muir, Prof. James .	3, Hillary Place.
66	Nicholson, A. H. .	
30	Nicholson, Marshall .	Middleton Hall, near Leeds.
64	*Nickols, Richard .	
67	Nunneley, A. G. .	Wanstead House, Burley, Leeds.
68	Oxley, James Walker .	28, Commercial Street.
93	Palmer, Henry John .	55, Albion Street.
28	*Passavant, P. W. .	
82	Pearson, John Thomas .	The Hall, Melmerby, S.O.
11	Price, Mrs. William N. .	Hillary Place.
38	*Ralph, John, M.A. .	
33	Ransome, Prof. Cyril, M.A.	3, St. Chad's Villas, Headingley.
69	Reynolds, Richard, F.I.C. .	Cliff Lodge, Hyde Park.
72	Rider, James .	8, Beech Grove Terrace.
18	Robson, A.W. M., F.R.C.S.	Church Lane House, Adel.
105	Ryder, Charles .	Gledhow Hill.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, John Edward .	Gledhow Wood, Gledhow.
57	Stringer, John William .	Inglebank, Far Headingley.
87	Talbot, Rev. Canon, D.D. .	The Vicarage, Hillary Place.
73	Teale, T. P., M.A., F.R.S. .	North Grange, Headingley.

74	Teasdale, Washington	Headingley.
76	*Tennant, Thomas	
78	*Tetley, F. W.	
58	Thompson, Chas. F.	34, College Road, Leeds.
79	Turner, Richard B.	Oakleigh, Buxton.
80	Wailes, William	2, Albion Place.
71	Ward, John	Moor-Allerton House.
111	*Watson, William Henry	
41	Webb, Joseph S.	26, Park Row.
97	Weston, Edward	Newton Park Villa, New Leeds
42	Whiting, John	Cliff Road.
83	Wicksteed, J.H., M.Inst.C.E.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M.	Brecondene, 220, Newton Hill.
85	*Wilson, John	
17	Wilson, Richard	28, Commercial Street.
35	Wood, Philip T.	22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah	29, Meadow Lane.
13	Stratten, Rev. J. R.	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert	13, St. John's Terrace.
2	Baines, Talbot, B.A.	Albion Street.
48	Barran, Rowland H.	Beechwood, Roundhay.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Arncliffe, Shireoak Road.
7	Best, Mrs. William W.	31, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	Shireoak Road, Headingley.
8	Bolland, W. T.	Oak Lea, Harrogate.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George	Blackman Lane.

72	Brigg, Matthew A.	12, Sholebroke Avenue.
11	Briggs, Riley	Springfield Mount.
75	Brunton, George	Hillary Mount, Woodhouse Lane.
18	Clark, E. Kitson, M.A.	13, Wellclose Place.
14	Corson, George	Wood Lane, Headingley.
41	Crossley, Thomas	Highfield House, Headingley.
35	Croysdale, Mrs. James	15, Ashwood Villas, Headingley.
16	Denny, T. G.	
32	*Dixon, A. S.	
65	Eddison, Octavius, B.A.	St. Helen's, Adel.
20	Eddison, Robert William	The Manor, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William	
69	Fraser, James B.	8, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, nr. Garforth.
25	Goodman, Prof. John	The Yorkshire College.
12	Hadow, Reginald T.	
42	Hannam, S. J. W.	44, Bank Street.
27	*Hargrave, John	
60	Harland, J. W.	Headingley.
28	Hepper, John	Clareville, Headingley.
30	Hobson, Alfred	Roundhay.
80	Holmes, Joseph	Chemical Works, Crown Street.
81	*Holroyd, James	
31	Illingworth, William	Flower Bank, Burley, Leeds.
33	Irwell, Arthur F.	8, Park Drive, Heaton, Bradford.
6	Jackson, Richard	Beech Villa, Cardigan Road.
34	Jackson, Rt. Hon. W. L., M.P.	Allerton Hall, Leeds.
67	Jefferson, Robert P.	26, Spencer Place.
63	*Jowitt, Miss E. M.	
38	*Lawson, Thomas	
39	*Lawson, John	
88	Legard, Albert G., M.A.	The Briary, Harrogate.
23	Lupton, Prof. Arnold	6, De Grey Road.

44	McCheane, Miss .	The Hollies, Headingley.
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch (P).	Park Row.
9	Mathers, John Shackleton.	Hanover House, Leeds.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	Morley, R. B. .	14, Westfield Terrace, Chapeltown.
49	Myers, W. C. .	Grove House, Roundhay.
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Springwell House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
51	Nunneley, Thomas .	Wanstead House, Burley, Leeds.
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Bramley Grange, Thorner.
55	Nussey, Samuel Leathley .	Potternewton Hall.
56	Nussey, Peter .	Springville, Shaw Lane.
59	Ramsbotham, S. H., M.D. .	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	Riley, H. W. .	131, Briggate.
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	20, Call Lane.
68	*Smith, William Farrar .	
76	Smithells, Prof. A., B.Sc. .	The Yorkshire College.
37	Snowdon, Miss .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., M.A.	Rupert Lodge, Grove Road.
77	Titley, Mrs. Anthony .	Manor House, Victoria Grove.
78	Titley, John A. .	Newton Hill, Leeds.
79	Tottie, Mrs. J. W. (P) .	
64	Tweedale, John .	12, South Parade.
82	Walker, H. B. .	
83	Ward, Edmund .	19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S. .	Buckingham Ter., Headingley.
90	Ward, William (P) .	12, Bank Street.
3	Webb, William Henry .	Aire Street.
85	Willson, J. J. .	Ballamona, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Albrecht, Horace	Springwood Road, Roundhay.
Armistead, Edwin	39, Louis Street.
Asquith, John Robert	Bond Place.
Baines, Miss	Aysgarth, Headingley.
Baines, Miss E. L.	Cawood, Apperley Bridge.
Bakewell, William	38, Park Square.
Barber, Miss	34, Westbourne Terrace.
Barran, Alfred	Cumberland Road, Headingley.
Barran, Mrs. John, Junr.	Westfield, Chapel-Allerton.
Bartholomew, W. H., C.E.	Ridge Way House.
Beaumont, Prof. R.	14, Regent Park Avenue.
Bedford, Charles S.	Broomleigh, Chapel Lane.
Bentfield, Charles	Shaw Lane, Headingley.
Best, Rev. J. H., B.Sc.	66, Cardigan Road.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	Wynneholme, Far Headingley.
Brown, F. H., M.A.	Headingley Hill School.
Buckley, J. C.	Longfield, Headingley.
Bulmer, Charles	Blenheim Lodge.
Bulmer, George Bertram	Calverley Chambers, Victoria Sq.
Butler, Bernard F.	The Vesper Lodge, Kirkstall.
Butler, Edmund	Kirkstall Forge.
Cameron, Dr. Spottiswoode	Ridge Mount, Cliff Road.
Chadwick, Charles M., M.A., M.D.	29, Park Square.
Chorley, R.	Basinghall Street.
Churton, T. Harding	5, South Parade.
Clark, Miss	Potternewton.
Cliff, W.	Western Flatts, Wortley.
Cohen, Dr. J. B.	15, Regent Park Avenue.

Connal, B. M., M.A.	13, Beech Grove Terrace.
Crampton, W. T.	Parcmont, Roundhay.
Croysdale, Charles	13, Shaw Lane, Headingley.
Croysdale, John	Westfield, Chapel-Allerton.
Dalton, George	The Yews, North Hill Road.
Ellison, James Edward	10, De Grey Road.
Firth, William	Woodsley House.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Fox, Rev. J.	Stourton Grange, Hunslet.
Gardner, Wilson	Brookfield Terrace, Headingley.
Gillespie, C. M., M.A.	The Yorkshire College.
Glover, Frederick, M.A.	16, De Grey Road.
Glover, W. A.	2, Tanshelf Drive, Pontefract.
Green, John H.	Horbury, near Wakefield.
Green, William	1, Tanfield Place.
Griffith, Prof. T. W., M.D.	Park Square.
Haigh, F. K.	14, Monkbridge Road, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	Aysgarth, Roundhay.
Hassé, A.	31, Commercial Street.
Heaton, J. A. D., M.A., LL.D.	30, Hyde Terrace, Leeds.
Hebblethwaite, Rhodes	5, Grosvenor Road, Headingley.
Hellier, J. B., M.D.	De Grey Terrace.
Hewetson, H. B.	9, Hanover Square.
Hindle, J. E.	10, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Horsfield, H. K.	Ivy Lodge, Chapel-Allerton.
Ingham, J. P.	14, East Parade.
Ingle, Herbert	Yorkshire College.
Jackson, Miss Mary	Well Close Mount.

Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Joy, R. E.	7, Beech Grove Terrace.
Kirk, J. C.	Belmont, Clarendon Road.
Kitson, F. J.	Oatlands, Burley, Leeds.
Kitson, Reginald	13, Wellclose Place.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lee, J.	26, Edinburgh Road, Upper Armley.
Lewkowitsch, J., Ph.D.	24, Moorland Road.
Little, F. Buller	Clough House, Chapel-Allerton.
Marshall, D. D.	231, Hyde Park Road.
Megson, Albert	Spencer Place, New Leeds.
Murphy, Albert J.	Preston House, Tonbridge Street.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Moorfield House, Headingley.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Phillips, John Henry	Hazel House, Methley.
Powell, William	4, Queen Square.
Powell, Miss	Girls' High School, Leeds.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Robinson, Edmund	42, Park Square.
Rogers, Prof. L. J., M.A., Mus.B.	13, Beech Grove Terrace.
Rowe, E.	3, The Villas, Garforth.
Rumboll, Sydney	Hope Villa, Woodhouse Lane.
Sanders, T. W.	5, Blenheim Square.
Saville, H.	35, Ash Grove, Headingley.
Scatcherd, Oliver	Morley, near Leeds.
Senior-Smith, Harry, M.A.	Burley Grange, Burley.
Simpson, E. O.	47, Albion Street.

Slade, Robert	14, Springfield Mount.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Stables, Marshall	Hope Villa, Armley.
Stockdale, T.	Spring Lea.
Stuhlmann, Mrs.	Cavendish House, Cavendish Rd.
Sykes, Arthur	Roundhay Grange.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Teale, Lionel H.	North Grange, Headingley.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Tiffany, George John	118, Kirkgate.
Titterington, Rev. W. T.	Fulneck, near Leeds.
Walker, A. T.	1, Atkinson Street, Hunslet.
Walker, James	Newton Park.
Walker, George	Do.
Watson, Charles	Burton Grange, Far Headingley.
Whitham, T.	Bramhope.
Willans, J. W.	Roxburghe, Harrogate.
Wilson, D'Arcy B.	Seacroft.
Wood, John	11, St. Mark's Terrace.
Wood, Robert H.	15, Bainbrigge Road.
Wray, Robert	40, Brunswick Street.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Springwood Road, Roundhay.
Anning, Miss E.	Girls' High School, Leeds.
Armistead, Mrs.	39, Louis Street, New Leeds.
Atkinson, Mrs. E.	16, Blenheim Terrace.
Baines, Mrs. H. S.	Cromer Hall, Leeds.
Barber, Miss Ethel	34, Westbourne Terrace.
Barran, Miss Ruth	Westfield, Chapel-Allerton.
Barran, P. A.	Do.

Beaumont, Mrs. R.	14, Regent Park Avenue.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Bentfield, Mrs. C.	Shaw Lane, Headingley.
Best, Mrs.	66, Cardigan Road.
Birch, Mrs.	16, De Grey Terrace.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	Wynneholme, Far Headingley.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brunton, Miss	Hillary Mount.
Bulmer, Miss	Blenheim Lodge.
Bulmer, Miss S. E.	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Butler, Mrs. B. F.	The Vesper Lodge, Kirkstall.
Cameron, Mrs.	Ridge Mount, Cliff Road.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Miss Louisa	Do.
Crampton, Charles	Do.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. C.	13, Shaw Lane.
Croysdale, Mrs. J.	Westfield, Chapel-Allerton.
Croysdale, Miss	Do. do.
Dalton, Mrs. G.	The Yews, North Hill Road.
Day, Miss	Mrs. Stuhlmann, Cavendish Rd.
Ellison, Miss	10, De Grey Road.
Fox, Mrs. J.	Stourton Grange, Hunslet.
Glover, Miss	16, De Grey Road.
Glover, Miss Mary	Do.
Green, Miss	1, Tanfield Place.
Green, Miss Ethel	Do.
Haigh, Miss	14, Monkbridge Road, Headingley.
Haigh, Miss E.	Do. do.

Hallilay, Mrs.	28, Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hartnell, Mrs. Wilson	Aysgarth, Roundhay.
Hassé, Mrs.	31, Commercial Street.
Hassé, Eric	Do.
Hebblethwaite, Mrs.	5, Grosvenor Road, Headingley.
Hellier, Miss	1, De Grey Terrace.
Hepper, Miss M. E.	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirsch, Miss Annie	Do.
Hogg, Mrs. Henry	Mr. Hartley, Blenheim Terrace.
Horsfield, Mrs. H. K.	Ivy Lodge, Chapel-Allerton.
Illingworth, G. N.	Flower Bank, Burley.
Jackson, Miss	Allerton Hall, Leeds.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Ernest H.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, H.	Do.
Kennedy, Miss K.	Girls' High School, Leeds.
Kitson, Mrs. F. J.	Oatlands, Burley, Leeds.
Little, Mrs. F. Buller	Clough House, Chapel-Allerton.
Little, Miss Edith	Do. do.
Marshall, Mrs. D. D.	231, Hyde Park Road.
Mathers, Miss	Hanover House.
Morley, Mrs.	14, Westfield Terrace, Chapeltown.
Myers, Miss	Mrs. Stuhlmann, Cavendish Rd.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Nicholson, Mrs. J. C.	Moorfield House, Headingley.
Nicholson, Miss	Do. do.
Nicholson, W. E.	Do. do.
Nussey, Miss	Potternewton Hall.

Nussey, Miss E.	Springville, Shaw Lane.
Nussey, Miss M.	Do. do.
Oakshott, Miss E.	Girls' High School, Leeds.
Ormiston, Miss M.	Do. do.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss	Mrs. Stuhlmann, Cavendish Rd.
Powell, Miss E. G.	Girls' High School, Leeds.
Ramsbotham, Miss	16, Park Place.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	Cliff Road.
Rickards, Miss	Wortley.
Robson, Mrs. A. W. Mayo	Church Lane House, Adel.
Rumboll, Mrs.	Hope Villa, Woodhouse Lane.
Ryder, Miss A. E.	Gledhow Hill.
Ryder, Miss E. I.	Do.
Ryder, Miss Louisa	Do.
Sanderson, Miss L.	Girls' High School, Leeds.
Sanderson, Miss M.	Do. do.
Saville, Miss S. E.	35, Ash Grove, Headingley.
Scatcherd, Mrs. O.	Morley.
Scattergood, Miss	41, Park Square.
Simpson, Miss	47, Albion Street.
Slade, Mrs. R.	14, Springfield Mount.
Slade, Miss E. M.	Do.
Slade, R. H.	Do.
Somers, Mrs.	48, Woodhouse Lane.
Stables, Mrs. M.	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Mrs. T.	Spring Lea.
Stroud, Mrs. W.	Rupert Lodge, Grove Road.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Taylor, Miss A.	Girls' High School, Leeds.

Teale, Miss	North Grange, Headingley.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thornley, Miss	Mr. Illingworth, Flower Bank.
Thornley, Miss M.	Mr. Tetley, Cardigan Road.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Willson, Miss Emilie Dorothy	Ballamona, Headingley.
Willson, Miss Margaret	Do.
Wood, Miss	11, St. Mark's Terrace.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

Sir Frederick J. Bramwell, F.R.S., M. Inst. C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

George Lane Fox, Bramham Park.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S., Stoke-Bishop, Bristol.

Wm. Hartley, Durban, Port Natal.

The Right Rev. the Lord Bishop of Hereford, The Palace, Hereford.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Clements R. Markham, C.B., F.R.S., F.L.S., Sec. R.G.S., &c., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

C. C. Oxley, Minster House, Ripon.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., 21, Charles Street, Berkeley Square, London.

Sir T. Wemyss Reid, 26 Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., 19, Gledhow Gardens, London.

Henry Seebohm, F.L.S., F.Z.S., 22, Courtfield Gardens, London, S.W.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

Prof. T. E. Thorpe, Ph.D., F.R.S., Somerset House, London.

Edward Harry Woods, Rosario, Argentine Republic.

JOWETT & SOWRY, Printers and Lithographers, 78, Albion Street, Leeds.

LEEDS

Philosophical and Literary Society.

THE ANNUAL REPORT

For 1894-5.

Se Le 1

THE

SEVENTY-FIFTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION 1894-5.

READ AT THE ANNUAL MEETING, MAY 7th, 1895.

LEEDS:
JOWETT & SOWRY, PRINTERS AND LITHOGRAPHERS, 78, ALBION STREET.
1895.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to simila personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SEVENTY-FIFTH SESSION.

During the Seventy-fifth Session of the Society the attendance at the General Meetings has been above the average, and considerable interest has been manifested in several of the subjects discussed.

The thanks of the Society are due to Sir T. Wemyss Reid, Prof. John Goodman, Prof. A. Smithells, and Mr. Edmund Wilson who delivered four interesting lectures gratuitously.

The complete List of Lectures was as follows:—

1.—"Co-operation in Nature." By Prof. CHARLES STEWART, F.L.S. *Oct. 16th, 1894.*

2.—"Experiences among the Smooth and Frizzly-haired Islanders of the Eastern Archipelago." By HENRY O. FORBES, LL.D., F.R.G.S., F.Z.S. *Nov. 6th, 1894.*

3.—"The Art of Biography." By Sir T. WEMYSS REID, LL.D. *Nov. 13th, 1894.*

4.—"Henry Fielding." By A. W. VERRALL, Litt.D. *Nov. 20th, 1894.*

5.—"Musical Sands." By C. CARUS-WILSON, F.G.S. *Dec. 4th, 1894.*

6.—"Country Life in the Middle Ages." By Mrs. J. R. GREEN. *Dec. 18th, 1894.*

7.—"The Chances of Death." By Prof. KARL PEARSON, M.A., LL.B. *Jan. 8th, 1895.*

8.—"Impressionism; or The Logic of Modern Painting." By D. S. MACCOLL, M.A. *Jan. 22nd, 1895.*

9.—"Constructive Art in Early Egypt, as exemplified in the Pyramids." By Prof. JOHN GOODMAN, M.I.Mech.E. *Feb. 5th, 1895.*

10.—"Protective Artifices among Marine Animals." By Prof. W. A. HERDMAN, D.Sc., F.R.S., F.L.S. *Feb. 19th, 1895.*

11.—"The recent discovery concerning the Composition of the Air." By Prof. A. SMITHELLS, B.Sc. *March 5th, 1895.*

12.—"Slums." By EDMUND WILSON. *March 19th, 1895.*

13.—"Women of Ancient Greece." By F. B. JEVONS, M.A. *March 26th, 1895.*

14.—"Leopardi: a Modern Classic." By OLIVER ELTON, B.A. *April 2nd, 1895.*

During the Christmas Holidays the Curator gave four Lectures on "Monkeys," "Birds which cannot fly," "Injurious Insects," and "Minerals." The average attendance was about 120, and marked attention was paid to the specimens from the Museum which were subsequently exhibited.

Miss Simpson delivered six Summer Lectures on Natural History to children, an average attendance of about 100 showed how well her efforts to combine instruction and amusement were appreciated.

The number of Members and Subscribers is:—

	1895	1894
Original Proprietary Members (78 Shares)...	60	62
New Proprietary Members (121 Shares) ...	84	85
Ordinary Members	2	2
New Ordinary Members	68	69
Annual Subscribers of £1 1s.	119	121
Annual Subscribers of 7s. 6d.	122	126
	455	465

25,056 persons have paid for entrance to the Museum during the year.

The Museum has received several additions, some of which are of considerable value. A collection of Carib Celts has been deposited by Rev. T. L. Clemens, of Tobago. A fine

collection of fossils from the Cayton Gill Beds has been presented by Rev. J. S. Tute. Mr. Arthur Motley has given a Maori skull, celt and other objects, and Mr. Wm. Paul the skull of a female Incas Mummy from Chili. Mr. T. W. Pollard has again presented a series of the nests of British birds.

Mr. W. H. Rinder has given a raised Map of Palestine, which was published by the Palestine Exploration Committee, and which has been placed in a glazed frame for exhibition at the top of the staircase. This has awakened a considerable amount of popular interest.

The Society has acquired by purchase a fine series of Permian fossils from Ripley and Durham, and a very perfect specimen of a Glass-rope Sponge *(Hyalonema Sieboldi)*.

A continuous record of the changes in the atmospheric pressure is kept by the new Barograph.

Various cases to illustrate the Life-histories of Injurious Insects, and the Transformations of Insects, have been prepared and exhibited and have attracted a considerable amount of attention from visitors. A collection of ethnological objects from New Guinea and China, lent by Mr. Chappell, has been displayed in the Industrial Museum.

Valuable additions to our Library have been received from the Trustees of the British Museum and from the Government of the United States. Mr. Edward Atkinson, F.L.S., Senior Curator in Zoology, has presented nearly forty volumes of the Journal of the Linnean Society.

During the year the Museum was visited twenty-nine times by classes of students in Biology and Geology of the Yorkshire College, and by a large class of University Extension students from Hunslet under the guidance of Mr. Kendall. Sixty-four visits have been paid by specialists, to several of whom extra facilities and assistance have been given. Specimens have been lent on six occasions to the Yorkshire College; on three to University Extension Lecturers; and on three others to the Leeds Naturalists' Society.

Several Subscribers who had formed a class in Geology under the direction of the Home Reading Union, made seven visits to the Library for the purpose of consulting books, besides several to the Museum.

Special regret must be expressed for the loss of one Honorary Member. The Right Rev. James Atlay, D.D., was elected Vicar of Leeds in 1859, and made Bishop of Hereford in 1868. During the whole of his residence in Leeds Dr. Atlay took an active interest in the welfare of the Society, and served upon the Council, for a large part of it he filled the office of Vice-President.

The Council have received with great regret an intimation from Mr. Sydney Lupton of his desire not to be re-appointed to the office of Honorary Secretary. Mr. Lupton has served the Society in this capacity for a period of upwards of nine years, and the Council feel that the most grateful acknowledgments are due to him for his long and zealous services. Mr. Lupton's distinguished scientific attainments, his sound judgment and excellent business capacity have been of the utmost service to the Society.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1894.

1894.	Mean Temperature.	Mean Height of Barometer (inches).	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	38·1	29·552	2·65	3·39
February	39·9	29·672	4·41	4·66
March	42·3	29·648	1·71	1·75
April	48·6	29·637	3·08	2·83
May	48·0	29·679	1·37	1·35
June	56·5	29·766	2·28	2·52
July	61·5	29·620	2·66	3·39
August	56·6	29·628	2·60	2·39
September	53·0	29·959	·43	·39
October	48·1	29·671	3·87	4·03
November	47·3	29·658	1·45	1·46
December	42·4	29·675	1·49	1·53

Mean monthly temperature—48·5°.

Mean monthly height of the barometer—29·72 inches.

Total rainfall for the year—Museum 28·0 inches; Woodhouse Cliff 29·63 inches. Average rainfall at the Museum for the ten years 1885-1894—28·03 inches.

Greatest degree of heat, indicated by the thermometer in the shade— 85° on June 29th; minimum— 11° on January 6th.

Greatest barometric pressure—30·49 inches on January 3rd, the temperature of the mercury being 42°; least pressure—28·66 inches on December 28th, the temperature of the mercury being 48°.

Greatest fall of rain (during 24 hours)—1·02 inches on October 20th.

The Bench Mark at the corner of the Philosophical Hall is 131·8′ above the Ordnance datum, and ·8′ above the pavement. The cistern of the barometer is 12·8′, the thermometers are 42′, and the rain-gauge is 45′ above the bench mark.

The Hall is situated at 1° 32′ 45″ or 6 min. 11 sec. W., and 53° 47′ 51″ N., and hence $g/g_{45°}$ is 1·000774. Taking the standard height of the barometer to be 30″, and the standard temperature to be 62° F, the height of the homogeneous atmosphere is 27860′. To find the height of a barometer at sea level equivalent to a reading of H″, at a temperature of t° F. different from 62° F., add to the reading H″ (.0054∓.00001t).

SUNSHINE AT LEEDS IN 1894.

The observations were made by Jordan's Photographic Sunshine Recorder at the following stations:—

1. The Museum, situate in the centre of the city; elevation above the sea, 145 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the city; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the city; elevation, 475 feet; on the fringe of the city.
4. Union Infirmary, Burmantofts, 1 mile from the centre of the city; elevation, 200 feet; industrial district.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible duration.
JANUARY	1	39·40	15·3
	2	46·55	18·1
	3	56·10	21·6
	4	31·15	12·0
FEBRUARY	1	53·30	19·2
	2	67·50	24·3
	3	76·20	27·4
	4	56·10	20·0
MARCH	1	175·30	47·8
	2	185·20	50·5
	3	189·40	51·7
	4	172·40	47·0
APRIL	1	111·25	26·3
	2	131·30	31·6
	3	136·10	32·3
	4	131·50	31·7
MAY	1	163·40	33·9
	2	183·0	37·9
	3	201·30	41·7
	4	132·20	37·7
JUNE	1	140·30	28·4
	2	147·20	29·8
	3	157·30	31·8
	4	153·40	31·0
JULY	1	166·40	33·5
	2	181·10	36·4
	3	194·30	39·1
	4	181·50	36·6
AUGUST	1	112·30	25·2
	2	125·0	28·1
	3	130·10	29·2
	4	120·0	26·9
SEPTEMBER	1	104·10	27·6
	2	118·50	31·5
	3	121·0	32·1
	4	117·40	31·2
OCTOBER	1	46·50	14·2
	2	46·50	14·2
	3	55·40	16·9
	4	56·20	17·1
NOVEMBER	1	35·0	13·2
	2	42·40	16·0
	3	50·0	18·9
	4	38·30	14·5
DECEMBER	1	25·30	10·5
	2	36·20	14·9
	3	46·30	19·1
	4	34·0	14·0

SUMMARY FOR THE YEAR

	Hours recorded. Hours.	M.	Difference from mean of 7 years in hours.	Per cent. of possible duration.
Museum ..	1,174	55	+250·58	26·3
Woodhouse Cliff	1,312	45	+165·42	29·4
Lawnswood ..	1,415	10	+153·61	31·7
Burmantofts ..	1,276	15	+149·38	28·6

29·0 per cent. mean for 1894.
31·6 ,, ,, 1893.
27·5 ,, ,, 1892.
22·2 ,, ,, 1891.
24·4 ,, ,, 1890.

20·7 per cent. mean for 1889.
19·9 ,, ,, 1888.
28·0 ,, ,, 1887.
25·3 ,, ,, eight years.

The Meteorological Office publishes the following records of sunshine for 1894, as observed at stations taken as representing specified districts:—

	Hours recorded.	Difference from mean.	Percentage of possible duration.
Scotland, N. (Stornoway, &c.) ..	1,129	+117	30
,, E. (Aberdeen, Marchmont) ..	1,290	+ 64	33
,, W. (Glasgow; Douglas, Isle of Man) ..	1,354	+ 43	31
England, N.E. (Durham, York) ..	1,305	+ 91	30
,, N.W. (Stonyhurst, Blackpool, Llandudno)	1,230	+ 57	31
,, Mid. (Cirencester, Oxford, &c.) ..	1,325	— 1	30
,, S. (London, Hastings, Southampton, &c.)	1,579	— 16	34
,, E. (Hillingdon, Geldestone, Cambridge)	1,459	— 43	33
,, S.W. (Pembroke, Falmouth, Plymouth, &c.)	1,610	— 8	36
Ireland, N. (Armagh, Markree Castle) ..	1,262	+ 55	29
,, S. (Dublin, Parsonstown, Valencia) ..	1,366	— 74	31
Channel Islands (Jersey) ..	1,703	— 63	41

SUMMARY.

31·1 per cent. mean for United Kingdom, 1894.
37·0 ,, ,, ,, 1893.
35·2 ,, ,, ,, 1892.
32·6 ,, ,, ,, 1891.
30·7 ,, ,, ,, 1890.

29·2 per cent. mean for United Kingdom, 1889.
27·5 ,, ,, ,, 1888.
35·6 ,, ,, ,, 1887.
32·3 ,, ,, ,, 8 years.

At the above stations 2,883 hours less sunshine were recorded in 1894 than in 1893.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the year 1894-5.

RECEIPTS.	£ s. d.	£ s. d.
To Balance in hand, May 1st, 1894	—	1 17 4
,, Balance at Bank do.	—	75 13 11
,, Annual Subscriptions, viz.:—		
76 New Proprietary Members, at 21s. ...	79 16 0	
2 Original Ordinary ,, 42s. ...	4 4 0	
61 New Ordinary ,, 21s. ...	64 1 0	
126 Annual Subscribers, at 21s.	132 6 0	
122 Annual Subscribers, at 7s. 6d. ...	45 15 0	
,, Arrears	5 5 0	
		331 7 0
,, Rent, viz.:—		
Cellars	40 0 0	
Lecture Room	169 10 0	
		209 10 0
,, Receipts from Visitors to Museum ...		104 8 0
,, Sale of Guides	4 1 11	
,, Bank Interest	1 5 0	
,, Sundries	5 14 0	
		11 0 11
		£733 17 2

PAYMENTS.	£ s. d.	£ s. d.
By Repairs and Alterations	62 6 7	
,, Rates and Taxes	4 11 1	
,, Fire Insurance	12 10 0	
,, Coals, &c.	22 16 7	
,, Gas	20 15 7	
,, Cleaning	8 1 0	
		131 0 10
,, Salaries and Wages	306 11 0	
,, Fee to Auditor	2 2 0	
		308 13 0
,, Collections, Library, and Scientific Apparatus... ...		45 10 9
,, Postages	8 14 2	
,, Advertising and Printing	34 8 9	
,, Lectures	121 12 8	
,, Sundries	18 14 3	
		183 9 10
,, Electric Light Supply	... ...	4 14 1
,, Law Expenses	... ...	14 15 8
,, Balance at Bank	... ...	44 14 0
,, ,, in hand	... ...	0 19 0
		£733 17 2

I have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 15th, 1895.

CHAS. BEEVERS,
CHARTERED ACCOUNTANT.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1894-5.

ZOOLOGY.

A small Collection of Birds' Nests and Eggs	Mr. T. W. Pollard, Kirkby Malzeard.
Specimen of Glass-rope Sponge (*Hyalonema Sieboldi*)	Purchased.
Living Slow-worm Two living Palmated Newts	Mr. W. Denison Roebuck, F.L.S., Leeds.
Stuffed Specimen of Golden Pheasant (*Thaumalea picta*) L., var. Lady Amherst	Mr. J. T. Pollard, Leeds.

BOTANY.

Edible Morel (*Morchella esculenta*), Scriven Park; Starry Puff-ball (*Geaster rufescens*), Scriven Park, and *Polyporus*, Walkingham	Mr. Geo. Paul, F.R.Met.S., Ripley.

PALÆONTOLOGY.

Collection of Permian Fossils	Purchased.
Collection of Fossils from the Cayton Gill Bed (Millstone Grit), made by the donor, in the neighbourhood of Ripley	The Rev. J. Stanley Tute, B.A., Markington.

GEOLOGY.

Mud and silicious deposits, and portion of White Terrace, Rotomahana, New Zealand	Mr. Arthur Motley, New Zealand.

MINERALOGY.

Specimens of Plumbago in Granite, &c., Norway	Mr. J. W. Addyman, B.A., Leeds.
Native Sulphur, Rotoma, New Zealand	Mr. Arthur Motley, New Zealand.

ETHNOLOGY.

Mummy-head of Incas woman, Junin, Chili	Mr. Wm. Paul, Chapel-Allerton.
Maori-skull, Wairarapa Plains, New Zealand	Mr. Arthur Motley, New Zealand.

ARCHÆOLOGY.

Celt found when digging in an old Maori pah or village, Wanganin, New Zealand	Mr. Arthur Motley, New Zealand.
Two Silver Coins found on the site of a Roman Church, on demolition, Tachaneza, near Poniastuski, Poland	Mrs. Veevers, Claremont House, Headingley.

PHOTOGRAPHY.

Four framed enlargements of Photographs of the surface of the Moon, taken at Lick Observatory	Mr. Sydney Lupton, M.A., Roundhay.

GEOGRAPHY.

Large Raised Map of Palestine, published by the Palestine Exploration Committee	Mr. W. H. Rinder, F.R.G.S., Chapeltown.

PUBLICATIONS.

Catalogue of Snakes, Vol. II. Catalogue of Birds, Vol. XXIII. Catalogue of the Mycetozoa Catalogue of the Fossil Plants of the Wealden, Part I. Catalogue of British Lichens, Part I.	The Trustees of the British Museum.
Some Recent Evidence in favour of Impact (pamphlet), by Prof. A. W. Bickerton, Sydney	The Author.
Catalogue of the Leeds Public Library	The Public Librarian, Mr. James Yates.
Poetical Works of Constance Naden Life and Mind	Lt.-Col. R. Lewins, M.D.
Roman Inscriptions in Britain, II., 1894	Mr. F. Haverfield, Oxford.
Fauna der Gaskohle, Band III., Heft 3	Purchased.
The Hidden Pyramid	Mr. J. J. Ward, Leeds.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-WEEKLY.

Bollettino delle Publicationi Italiane	The Compiler.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	Purchased.
Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.
Journal of the Linnean Society	Mr. Edward Atkinson, F.L.S.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions.....	Purchased.
Proceedings of the Royal Society ...	The Society.
Proceedings of the Royal Institution of Great Britain	The Institution.
Publications of the Ray Society, Vol. VI., Part III., 1893	Purchased.
British Association Report.....	The Association

Greenwich Observations	The Astronomer-Royal.
Greenwich five-year Catalogue of 258 Stars, 1890	
Cape Heliometer Observations, 1881-1883	
Memoirs of the Royal Astronomical Society	The Society.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall, 1893	Purchased.
Monographs of the Palæontographical Society, Vol. XLVIII.	Purchased.
Proceedings of the Geologists' Association	The Association.
Proceedings of the Yorkshire Geological and Polytechnic Society, Vol. XII. Part IV., Vol. X. (bound) and 17 back numbers towards completion of set.....	The Society.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Liverpool Geological Society.....	The Society.
Journal of the Liverpool Geological Association	The Association.
Transactions of the Manchester Geological Society	The Society.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne.....	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philosophical Society	The Society.
Report of the Bradford Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society	The Society.
Report of the Halifax Literary and Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society, 1894 ...	The Society.
Report of the Committee of Leicester Town Museum	The Museum.

Annual Report of the Brighton Town Museum	The Museum.
Annual Report, Middlesex Hospital...	The Hospital.
Annual Report of the Birkenhead Literary and Scientific Society	The Society.
Proceedings of the Liverpool Literary and Philosophical Society	The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association	The Association.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society	The Society.
Annual Report of the Sheffield Literary and Philosophical Society	The Society.
Annual Report of the Chester Society of Natural Science and Literature	The Society.
Transactions of the Leeds Naturalists' Club and Scientific Association.....	The Association.
Report of the Manchester Museum, Owens College.....	The Curator.
Journal of the Royal Institution of Cornwall	The Institution.
Annual Report of the Royal Cornwall Polytechnic Society, 1893	The Society.
Report of Associated Architectural Societies	The Society
Journal of the Chester Archæological and Historic Society	The Society.
Geological Record	Purchased.
Transactions of the Yorkshire Naturalists' Union	The Union.
Proceedings of the Royal Society of Edinburgh ..... Transactions do. do.	The Society.
Transactions of the Edinburgh Geological Society.....	The Society.
Proceedings of the Glasgow Philosophical Society, 1893-4	The Society.
Proceedings of the Berwickshire Naturalists' Club	The Club.

Scientific Proceedings of the Royal Dublin Society..... Scientific Transactions do.	The Society.
Transactions of the Royal Irish Academy ..... Proceedings do. do.	The Academy.
Journal of the Royal Geological Society of Ireland	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1893-4	The Club.
Publications of the Royal Swedish Academy of Sciences.....	The Academy.
Papers of the Royal University of Norway	The University.
Bulletin of the Geological Institution of the University of Upsala, 1892-3	The Institution.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger.....	Royal Danish Society of Sciences.
Bulletin Société Impériale, Moscow ...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deutschen Akademie der Naturforscher	The Academy.
Memoires de la Société d'émulation d'Abbeville	The Society.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien ...	The Society.
Memoirs of the National Academy of Sciences	The Academy.
Report of Australasian Association for the Adv. of Science, Vol.V.	The Association.
Journal and Proceedings of the Royal Society of New South Wales	The Society.
Wealth and Progress of New South Wales, 1893	The Agent-General.
Records of the Geological Survey of N.S.W., Vol. IV. .... Memoirs of the Geological Survey of N.S.W.	The Surveyor.

Annual Report and Papers of the Department of Mines and Agriculture, N.S.W., 1893	The Department.
Transactions and Proceedings of the Royal Geographical Society of Australasia (N.S.W. Branch).....	The Society.
Prodromus of the Zoology of Victoria	The Editor.
Records of the Australian Museum Report of the Trustees of the Australian Museum.....	The Trustees.
Proceedings of the Royal Society of Queensland	The Society.
Transactions and Proceedings of the New Zealand Institute	The Institute.
Papers and Proceedings of the Royal Society of Tasmania	The Society.
Proceedings and Transactions of the Royal Society of Canada, Vol. XI., 1893	The Society.
Proceedings of the Canadian Institute Annual Report do. Transactions do.	The Institute.
Proceedings and Transactions of the Nova Scotian Institute of Natural Science	The Institute.
Annual Report (6th) Hamilton Public Library, Ontario, Canada	The Librarian.
Journal and Proceedings of the Hamilton Association	The Association.
Geological and Natural History Survey of Canada ..... Annual Report and Papers—do. ..... Contributions to Canadian Palæontology	Department of the Interior.
Memorias de la Sociedad Científica (Mexico)	The Society.
'Boletin Mensual" Observatorio Meteorologico-Magnetico,Central de Mexico	The Editor.
Annuario del Observations Astronomico Nacional, Mexico.....	The Astronomer.
Boletin del Observatorio Astronómico Nacional de Tacubaya	The Observer.

Report of the Muséum National, Rio-de-Janeiro Archivos do.	Directeur Général.
Cape Meridian Observations Annals of the Cape Observatory Report of H.M. Astronomer at the Cape of Good Hope to the Secretary of Admiralty, 1889-92 and 1893	Cape Astronomer-Royal.
Transactions of the American Philosophical Society Proceedings do.	The Society.
United States Geological Survey, 12th Annual Report, Parts I., II., and III. 13th do. Part I. Contributions to American Ethnology. United States Geographical and Geological Survey, Vol. IX.	The Department.
United States Department of Agriculture, Publications of	The Department.
Report of the Smithsonian Institution, 1892 Smithsonian Miscellaneous Collections Smithsonian Contributions Annual Reports of the Bureau of Ethnology, 1889-90 and 1890-91 Miscellaneous Publications of the Bureau of Ethnology Bibliography of the Wakashan Languages The Pamunkey Indians of Virginia The Maya Year An Ancient Quarry in Indian Territory	The Institution.
Proceedings of United States National Museum Report do. do. Bulletins do. do.	The Museum.
Transactions of the Academy of Science of St. Louis	The Academy.
Proceedings of the Academy of Natural Sciences of Philadelphia Papers do. do.	The Academy.
Proceedings of the American Academy of Arts and Sciences, New Series, 1893-94	The Academy.

Transactions of the Wisconsin Academy of Sciences, Arts, and Letters	The Academy.
Memoirs of the National Academy of Sciences, Washington.....	The Academy.
Proceedings of the Davenport Academy of Natural Science.....	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia ...	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba	The Society.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science	The Union.
Proceedings of the Boston Society of Natural History, U.S.A., Vol. XXVI., Parts II. and III..... Memoirs do. Geology of the Boston Basin, Vol. I., Part II.....	The Society.
Bulletins of the Essex Institute, U.S.A.	The Institute.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College ..... Annual Report of Harvard College, 1893-4	The College.
Harvard University Catalogue	The University.
Transactions of the Astronomical Observatory of Yale University ... Annual Report do. Report of the President of Yale University ..... Catalogue ditto ditto	The University.
Journal of the Elisha Mitchell Scientific Society, 1894, Part II....	The Society.
Tufts College Studies.....	The College.
Transactions of the Meriden Scientific Association	The Association.

LIST OF OFFICERS AND COUNCIL,

1895-6.

OFFICERS.

PRESIDENT	REV. CHAS. HARGROVE, M.A.
VICE-PRESIDENTS. .	NATHAN BODINGTON, M.A. SYDNEY LUPTON, M.A.
HONORARY SECRETARIES .	ARTHUR SMITHELLS, B.Sc. E. KITSON CLARK, M.A.
TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	J. A. NUNNELEY, M.B.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. LOUIS C. MIALL, F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. J. H. D. MATTHEWS, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	T. P. TEALE, M.A., F.R.S.
T. WALTER HARDING.	J. H. WICKSTEED, M.Inst.C.E.
THOMAS MARSHALL, M.A.	J. J. WILLSON.
RICHARD REYNOLDS, F.I.C.	EDMUND WILSON.
THOMAS SCATTERGOOD.	RICHARD WILSON.

Secretary . . .	W. F. HUSBAND, LL.B.
Curator . . .	HENRY CROWTHER, F.R.M.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1895-6.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	*Aldam, Wm.	
3	Armitage, Robert	Farnley.
4	Arthington, Robert	Headingley.
49	Baines, Mrs. Arthur	The Heath, Adel.
5	Baines, Herbert S.	Cromer Hall, Leeds.
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, Sir John, Bart., M.P.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	Broomfield Crescent, Headingley.
11	*Brown, James	
31, 62	Brown, Wm. J. (2 shares)	The Mount, Ackworth.
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16,	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
26	*Ellershaw, John	
28	Empson, Christopher	Mill Mount, York.
29, 48	Ford, J. R. (2 shares)	Quarry Dene, Weetwood.
33	Goodman, Benjamin	Gledhow House.
36-8	Gott, Wm. Henry (3 shares)	

61	Greenhow, Wm. T. .	NewtonCottage,Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
27	Hall, William .	Moor Lane, Headingley.
39	*Harding, T. R. .	
64	Harding, Thomas Walter .	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Regent Villas, Cumberland Rd.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	102, Lexham Gardens, Kensington, S.W.
30	Horsfall, J., M.A., F.R.C.S.	Cambray, Richmond Hill, Bournemouth, E.
47	Ingham, Constantine .	3, Belgrave Crescent, Scarbro'.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	TheLimes, Kirkstall Lane, Leeds.
57	Lupton, Charles .	The Harehills, Roundhay.
32	Lupton, Edward Basil .	Moorlands, Headingley.
53	Lupton, Francis M., M.A.	Rockland, Newton Park.
56	Lupton, Sydney, M.A. .	Grove Cottage, Roundhay.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	*Marshall, Arthur, F.G.S. .	
60	*Marshall, John, M.A. .	
66	Marshall, Reginald Dykes	Castlerigg Manor, Keswick.
67	Marshall, V. A. E., B.A. .	Monk Coniston, Ambleside.
50	Mason, Charles Letch .	Moorland Terrace.
65	Miall, Prof. Louis C., F.R.S.	Crag Foot, Ben Rhydding.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	
10	Streatfeild, Richard James.	The Rocks, Uckfield, Sussex.
71	Tatham, Miss .	Springfield Mount.
52	Taylor, Benjamin .	20, Moorland Road.
72	Teale, Thomas Greenwood	36, Trinity Street.

73	*Teale, Mrs.	
74	Tottie, Mrs. John William	
34, 35	Truro, The Bishop of (2 shares)	Trenython, Par Station.
54	Waite, James Butler	Belvidere, Newton Road.
75	Walker, Edward	32, Springfield Mount.
17	Walker, Reginald Thomas	1, Furnival's Inn, Holborn, London, E.C.
76	Ward, William	12, Bank Street.
12	Wilson, Rev. Benjamin	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund	Denison Hall.
1	Wurtzburg, John Henry	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S.	Langholme, Franklin Road, Harrogate.
113	Bailes, Richard	Ridge Villa, Meanwood Road.
116	*Baines, Frederick	
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
62	Barley, D. H., M.D.	Grove House, Burmantofts.
91	Bedford, James	Woodhouse Cliff.
15	Bilbrough, Wm. Radford	15, Beech Grove Terrace.
3	Birchall, Edward	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G.	2, East Parade.
13	Boothman, David	Rough House, Headingley.
4	Boothroyd, William	Grove Mill, Headingley.
10	Bowling, John	Newstead House, Spencer Place.
49	Braithwaite, William	Throstle Nest, Horsforth.
5, 6	Brown, G. W. (2 shares)	78, Belsize Park Gardens, Hampstead, London.
89	Buckton, Joshua	Meanwood.
1	Burrell, Benjamin A.	5, Mount Preston.
86	Carter, J. B.	Elm House, Potternewton.
9	*Chadwick, William	
14	Conyers, W. H.	The Hills, Ilkley.
45	Craven, John	3, Beech Grove Terrace.
104	Crawford, John William	Newton Lane.

26	Dawson, Oswald .	Albion Walk Chambers, Leeds.
19	Fairbairn, Sir Andrew .	Askham Grange, near York.
118	Flitch, John R. .	Chapel-Allerton.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
102-3, 106-10, 114-15	Gott, William Henry (P) (9 shares) .	
22	Hargrave, Charles .	St. Agnesgate House, Ripon.
23	*Hargrave, James .	
7	Hargrove, Rev. C., M.A. .	10, De Grey Terrace.
16	Harvey, William .	Heathfield, Ilkley.
81	Hatch, S. C. .	Church Cottage, Bexley, Kent.
44	Hepper, Mrs. J. H.	Suffolk Lodge, Harrogate.
51	Hoggard, Alfred .	25, Cavendish Road.
98	Howgate, William .	21, Blenheim Terrace.
36	*Hudson, Henry .	
84	Hummel, Prof. J. J. .	152, Woodsley Road.
120	Ingham, Samuel .	Headingley Hall.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Harehills, Leeds.
40	Joy, William Lomas .	Brentwood, Beverley.
43	*Kitson, James .	
46	Kitson, J. Hawthorn .	Elmete Hall, Roundhay.
47	Kitson, Sir Jas., Bart., M.P.	Gledhow Hall.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.
90	Lawson, Frederick W. .	Woodfield, Wood Lane.
50	Leather, Ernest Arthur .	Birstwith Hall, Ripley.
53	Lupton, Mrs. Arthur .	Headingley.
95	Lupton, Arthur G. .	Wellington Street.
8	Lupton, Henry .	Lyndhurst, Headingley.
54	*Lupton, Joseph .	
55	Lupton, Mrs. John .	Moorlands, Headingley.
21	Lupton, Oliver .	Shireoak Road, Headingley.
56	Lupton, William Walter .	The Grove, Roundhay.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares) .	Rockland, Newton Park.

88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Regent Villas, Cumberland Road.
60	Marshall, Thomas, M.A. .	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D. .	Grammar School, Leeds.
27	Maude, William Henry .	Middleton Lodge, Leeds.
117	Middleton, Arthur .	Calverley Chambers, Victoria Sq.
34	Muir, Prof. James .	3, Hillary Place.
66	Nicholson, A. H. .	
30	Nicholson, Marshall .	Middleton Hall, near Leeds.
64	*Nickols, Richard .	
67	Nunneley, A. G. .	Wanstead House, Burley, Leeds.
68	Oxley, James Walker .	28, Commercial Street.
93	Palmer, Henry John .	55, Albion Street.
28	*Passavant, P. W. .	
82	Pearson, John Thomas .	The Hall, Melmerby, S.O.
11	Price, Mrs. William N. .	Hillary Place.
38	*Ralph, John, M.A. .	
33	Ransome, Prof. Cyril, M.A.	3, St. Chad's Villas, Headingley.
69	Reynolds, Richard, F.I.C. .	Cliff Lodge, Hyde Park.
72	Rider, James .	8, Beech Grove Terrace.
18	Robson, A.W. M., F.R.C.S.	Church Lane House, Adel.
105	Ryder, Charles .	Gledhow Hill.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, John Edward .	Gledhow Wood, Gledhow.
57	Stringer, John William .	Inglebank, Far Headingley.
87	Talbot, Rev. Canon, D.D. .	The Vicarage, Hillary Place.
73	Teale, T. P., M.A., F.R.S. .	North Grange, Headingley.
74	Teasdale, Washington .	Headingley.
76	*Tennant, Thomas .	
78	*Tetley, F. W. .	
58	Thompson, Chas. F. .	34, College Road, Leeds.
79	Turner, Richard B. .	Oakleigh, Buxton.
80	Wailes, William .	2, Albion Place.
71	Ward, John .	Moor-Allerton House.

111	*Watson, William Henry .	
41	Webb, Joseph S. .	26, Park Row.
97	Weston, Edward ..	Newton Park Villa, New Leeds.
42	Whiting, John .	Cliff Road.
83	Wicksteed, J.H., M.Inst.C.E.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M. .	Brecondene, 220, Newton Hill.
85	*Wilson, John .	
17	Wilson, Richard .	28, Commercial Street.
35	Wood, Philip T. .	22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah	29, Meadow Lane.
13	Stratten, Rev. J. R. .	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert .	13, St. John's Terrace.
2	Baines, Talbot, B.A. .	Albion Street.
48	Barran, Rowland H. .	Beechwood, Roundhay.
4	Barwick, J. M. .	Low Hall, Yeadon.
5	Bedford, James E., F.G.S. .	Arncliffe, Shireoak Road.
7	Best, Mrs. William W. .	31, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	Shireoak Road, Headingley.
8	Bolland, W. T. .	Oak Lea, Harrogate.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George .	Blackman Lane.
72	Brigg, Matthew A. .	12, Sholebroke Avenue.
11	Briggs, Riley .	Springfield Mount.
75	Brunton, George .	Hillary Mount, Woodhouse Lane.
18	Clark, E. Kitson, M.A. .	13, Wellclose Place.
14	Corson, George .	Wood Lane, Headingley.
41	Crossley, Thomas ..	Highfield House, Headingley.
35	Croysdale, Mrs. James .	15, Ashwood Villas, Headingley

33	Denison, Samuel .	32, Clarendon Road.
16	Denny, T. G. .	
32	*Dixon, A. S. .	
65	Eddison, Octavius, B.A. .	St. Helen's, Adel.
20	Eddison, Robert William .	The Manor, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William .	
69	Fraser, James B. .	8, Park Square.
24	Gascoigne, F. C. Trench .	Parlington Park, nr. Garforth.
25	Goodman, Prof. John .	The Yorkshire College.
12	Hadow, Reginald T. .	
42	Hannam, S. J. W. .	44, Bank Street.
27	*Hargrave, John .	
60	Harland, J. W. .	Headingley.
28	Hepper, John .	Clareville, Headingley.
30	Hobson, Alfred .	8, Ladywood Villas, Roundhay.
80	Holmes, Joseph .	Chemical Works, Crown Street.
81	*Holroyd, James .	
31	Illingworth, William .	Flower Bank, Burley, Leeds.
6	Jackson, Richard .	Beech Villa, Cardigan Road.
34	Jackson, Rt. Hon. W. L., M.P. .	Allerton Hall, Leeds.
67	Jefferson, Robert P. .	26, Spencer Place.
63	*Jowitt, Miss E. M. .	
38	*Lawson, Thomas .	
39	*Lawson, John .	
88	Legard, Albert G., M A. .	Balliol House, Harrogate.
23	Lupton, Prof. Arnold .	6, De Grey Road.
44	McCheane, Miss .	Moor Cottage, Adel.
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch (P).	Park Row.
9	Mathers, John Shackleton.	Hanover House, Leeds.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	Morley, R. B. .	14, Westfield Terrace, Chapeltown.
49	Myers, W. C. .	Grove House, Roundhay.
50	Nelson, Henry .	St. John's Cottage, Leeds.

70	Nelson, James Henry .	Springwell House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
51	*Nunneley, Thomas .	
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Bramley Grange, Thorner.
55	*Nussey, Samuel Leathley .	
56	Nussey, Peter .	Springville, Shaw Lane.
59	Ramsbotham, S. H., M.D. .	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	Riley, H. W. .	131, Briggate.
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	20, Call Lane.
68	*Smith, William Farrar .	
76	Smithells, Prof. A., B.Sc. .	The Yorkshire College.
37	Snowdon, Miss .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., M.A.	Rupert Lodge, Grove Road.
77	Titley, Mrs. Anthony .	Manor House, Victoria Grove.
78	Titley, John A. .	Newton Hill, Leeds.
79	Tottie, Mrs. J. W. (P) .	
64	Tweedale, John .	12, South Parade.
82	Walker, H. B. .	
83	Ward, Edmund .	19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S. .	Buckingham Ter., Headingley.
90	Ward, William (P)	12, Bank Street.
3	Webb, William Henry .	Aire Street.
85	Willson, J. J. .	Ballamona, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Albrecht, Horace .	Springwood Road, Roundhay.
Armistead, Edwin .	39, Louis Street.
Asquith, John Robert .	Bond Place.
Bagshawe, Mrs. .	7, Ash Grove.
Baines, Miss .	Aysgarth, Headingley.

Baines, Miss E. L	Cawood, Apperley Bridge.
Bakewell, William	38, Park Square.
Barber, Miss	34, Westbourne Terrace.
Barran, Alfred	Cumberland Road, Headingley.
Barran, Mrs.	Weetwood, near Leeds.
Bartholomew, W. H., C.E.	Ridge Way House.
Beaumont, Prof. R.	14, Regent Park Avenue.
Bedford, Charles S.	Broomleigh, Chapel Lane.
Best, Rev. J. H., B.Sc.	66, Cardigan Road.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Bointon, James W.	17, Brudenell Avenue.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	Wynneholme, Far Headingley.
Brown, F. H., M.A.	Headingley Hill School.
Buckley, J. C.	Longfield, Headingley.
Bulmer, Charles	Blenheim Lodge.
Bulmer, George Bertram	Central Bank Chambers.
Butler, Bernard F.	The Vesper Lodge, Kirkstall.
Butler, Edmund	Kirkstall Forge.
Cameron, Dr. Spottiswoode	Ridge Mount, Cliff Road.
Chadwick, Charles M., M.A., M.D.	29, Park Square.
Chorley, R.	Basinghall Street.
Churton, T. Harding	5, South Parade.
Clark, Miss	Potternewton.
Clark, Miss Alice	35, Mount Preston.
Cliff, Walter	Western Flatts, Wortley.
Cohen, Dr. J. B.	15, Regent Park Avenue.
Connal, B. M., M.A.	13, Beech Grove Terrace.
Crampton, W. T.	Parcmont, Roundhay.
Croysdale, Charles	13, Shaw Lane, Headingley.
Croysdale, John	Westfield, Chapel-Allerton.
Dalton, George	The Yews, North Hill Road.
Dodgshun, C. C.	22, Springfield Mount.
Ellison, James Edward	10, De Grey Road.
Firth, William	Woodsley House.
Flockton, William	Hopewell House, Oulton.

Foster, George	Bleak House, Harehills.
Gardner, Wilson	Brookfield Terrace, Headingley.
Gillespie, C. M., M.A.	The Yorkshire College.
Glover, Frederick, M.A.	16, De Grey Road.
Green, John H.	Horbury, near Wakefield.
Green, William	1, Tanfield Place.
Griffith, Prof. T. W., M.D.	Park Square.
Haigh, F.	14, Monkbridge Road, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	Aysgarth, Roundhay.
Hassé, A.	31, Commercial Street.
Hebblethwaite, Rhodes	5, Grosvenor Road, Headingley.
Hewetson, H. B.	9, Hanover Square.
Hick, Edwin	39, Briggate.
Hindle, J. E.	10, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Ingham, J. P.	14, East Parade.
Ingle, Herbert	Yorkshire College.
Jefferson, Miss M.	4, Woodhouse Square.
Jessop, T. R., F.R.C.S.	Roundhay Mount.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Joy, R. Eustace	7, Beech Grove Terrace.
Kennedy, Miss	St. Mary's Vicarage.
Kitson, F. J.	Oatlands, Burley, Leeds.
Knight, Miss	Far Headingley.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lean, W. S.	7, Woodsley Terrace.
Lee, J.	26, Edinburgh Road, Upper Armley.
Leigh, Percy	6, Portland Crescent.
Lewkowitsch, J., Ph.D.	24, Moorland Road.

Megson, Albert	Spencer Place, New Leeds.
Moynihan, B. G. A., M.B.	33, Park Square.
Murphy, Albert J.	Preston House, Tonbridge Street.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Moorfield House, Headingley.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Phillips, John Henry	Hazel House, Methley.
Powell, William	4, Queen Square.
Powell, Miss	Girls' High School, Leeds.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Robinson, Edmund	42, Park Square.
Rogers, Prof. L. J., M.A., Mus.B.	13, Beech Grove Terrace.
Rowe, E.	3, The Villas, Garforth.
Rumboll, Sydney	Hope Villa, Woodhouse Lane.
Sanders, T. W.	5, Blenheim Square.
Saville, H.	35, Ash Grove, Headingley.
Scatcherd, Mrs. Oliver	Morley, near Leeds.
Scott, H. E.	1, St. Chad's Gardens, Far Headingley.
Simpson, E. O.	47, Albion Street.
Slade, Robert	14, Springfield Mount.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Stables, Marshall	Hope Villa, Armley.
Stockdale, T.	Spring Lea.
Stuhlmann, Mrs.	Cavendish House, Cavendish Rd.
Sykes, Arthur	Roundhay Grange.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Teale, Lionel H.	North Grange, Headingley.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Wager, Harold	Bank Villa, Stainbeck Lane.

Walker, A. T.	1, Atkinson Street, Hunslet.
Walker, James	Newton Park.
Walker, George	Do.
Watson, Charles	Burton Grange, Far Headingley.
Whitham, T.	Bramhope.
Willans, J. W.	Roxburghe, Harrogate.
Wilson, D'Arcy B.	Seacroft.
Wood, Robert	27, Cardigan Road.
Wood, Robert H.	15, Bainbrigge Road.
Wray, Robert	40, Brunswick Street.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Springwood Road, Roundhay.
Anning, Miss E.	Girls' High School, Leeds.
Armistead, Mrs.	39, Louis Street, New Leeds.
Baines, Mrs. H. S.	Cromer Hall, Leeds.
Barber, Miss Ethel	34, Westbourne Terrace.
Barran, Miss Ruth	Weetwood, near Leeds.
Barran, P. A.	Do.
Barran, J. N.	Do.
Beaumont, Mrs. R.	14, Regent Park Avenue.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Best, Mrs.	66, Cardigan Road.
Birch, Mrs.	16, De Grey Terrace.
Bointon, Mrs.	17, Brudenell Avenue.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	Wynneholme, Far Headingley.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brunton, Mrs.	Hillary Mount.
Brunton, Miss	Do.
Bulmer, Miss	Blenheim Lodge.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.

Butler, Mrs. B. F.	The Vesper Lodge, Kirkstall.
Cameron, Mrs.	Ridge Mount, Cliff Road.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Miss Louisa	Do.
Crampton, Charles	Do.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. C.	13, Shaw Lane.
Croysdale, Mrs. J.	Westfield, Chapel-Allerton.
Croysdale, Miss	Do. do.
Dalton, Mrs. G.	The Yews, North Hill Road.
Day, Miss	Mrs. Stuhlmann, Cavendish Rd.
Dodgshun, Mrs. C. C.	22, Springfield Mount.
Ellison, Miss	10, De Grey Road.
Glover, Miss	16, De Grey Road.
Glover, Miss Mary	Do.
Green, Miss	1, Tanfield Place.
Green, Miss Ethel	Do.
Haigh, Miss	14, Monkbridge Road, Headingley.
Haigh, Miss E.	Do. do.
Hallilay, Mrs.	28 Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hartnell, Mrs. Wilson	Aysgarth, Roundhay.
Hassé, Mrs.	31, Commercial Street.
Hassé, Eric	Do.
Hebblethwaite, Mrs.	5, Grosvenor Road, Headingley.
Hepper, Miss M. E.	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirsch, Miss Annie	Do.
Hogg, Mrs. Henry	Mr. Hartley, Blenheim Terrace.
Illingworth, G. N.	Flower Bank, Burley.
Jackson, Miss	Allerton Hall, Leeds.
Jessop, Miss	Roundhay Mount.
Jessop, Miss Maude	Do.

Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Miss	Do.
Josephy, Miss B.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, H.	Do.
Kitson, Mrs. F. J.	Oatlands, Burley, Leeds.
Lupton, Mrs. A.	6, De Grey Road.
Mathers, Miss	Hanover House.
Miller, Miss	Roundhay Mount.
Milne, Miss	7, Ash Grove.
Morley, Mrs.	14, Westfield Terrace, Chapeltown.
Myers, Miss	Mrs. Stuhlmann, Cavendish Rd.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Nicholson, Mrs. J. C.	Moorfield House, Headingley.
Nicholson, Miss	Do. do.
Nicholson, W. E.	Do. do.
Nussey, Miss	Potternewton Hall.
Nussey, Miss E.	Springville, Shaw Lane.
Nussey, Miss M.	Do. do.
Ormiston, Miss M.	Girls' High School, Leeds.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss	Mrs. Stuhlmann, Cavendish Rd.
Powell, Miss E. G.	Girls' High School, Leeds.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	Cliff Road.
Rickards, Miss	Wortley.
Rumboll, Mrs.	Hope Villa, Woodhouse Lane.
Ryder, Miss E. I.	Gledhow Hill.
Ryder, Miss Louisa	Do.
Saville, Miss S. E.	35, Ash Grove, Headingley.
Scattergood, Miss	41, Park Square.
Scott, Miss	1, St. Chad's Gardens.
Scott, Miss A.	Do.
Scott, Miss J.	Do.

Simpson, Miss	47, Albion Street.
Slade, Mrs. R.	14, Springfield Mount.
Slade, Miss E. M.	Do.
Slade, R. H.	Do.
Somers, Mrs.	48, Woodhouse Lane.
Stables, Mrs. M.	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Mrs. T.	Spring Lea.
Stroud, Mrs. W.	Rupert Lodge, Grove Road.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Teale, Miss	North Grange, Headingley.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thornley, Miss	Mr. Illingworth, Flower Bank.
Thornley, Miss M.	Mr. Tetley, Cardigan Road.
Wager, Mrs.	Bank Villa, Chapel-Allerton.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Willson, Miss Emilie Dorothy	Ballamona, Headingley.
Willson, Miss Margaret	Do.
Wood, Miss Edith	27, Cardigan Road.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

Sir Frederick J. Bramwell, F.R.S., M. Inst. C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

George Lane Fox, Bramham Park.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S., Stoke Bishop, Bristol.

Wm. Hartley, Durban, Port Natal.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Clements R. Markham, C.B., F.R.S., F.L.S., Sec. R.G.S., &c., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

C. C. Oxley, Minster House, Ripon.

Sir T. Wemyss Reid, 26 Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., 19, Gledhow Gardens, London.

Henry Seebohm, F.L.S., F.Z.S. 22, Courtfield Gardens, London, S.W.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

Prof. T. E. Thorpe, Ph.D., D.Sc., F.R.S., Somerset House, London.

Edward Harry Woods, Rosario, Argentine Republic.

JOWETT & SOWRY, Printers and Lithographers, 73, Albion Street, Leeds.

LEEDS

Philosophical and Literary Society.

THE ANNUAL REPORT

For 1895-6.

Se Lc1

THE

SEVENTY-SIXTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION 1895-6.

READ AT THE ANNUAL MEETING, MAY 5th, 1896.

LEEDS:
JOWETT & SOWRY, PRINTERS AND LITHOGRAPHERS, 78, ALBION STREET.
1896.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SEVENTY-SIXTH SESSION.

During the past Session the Society has held fourteen General Meetings, which have on the whole been well attended. The innovation of having a lecture delivered in a foreign language proved very acceptable to the members, and the thanks of the Society are due to M. du Gillon for his interesting lecture. The Society is also indebted to the President, Prof. E. C. Clark, Mr. Orrock, Mr. Thomas Marshall, and Dr. Cohen for valuable lectures delivered gratuitously.

The List of Lectures is as follows:—

1.—"The Making of a Chinaman." By Rev. W. T. A. BARBER, M.A. *Nov. 5th, 1895.*

2.—"A New Race in Egypt." By Prof. W. M. FLINDERS PETRIE, D.C.L., LL.D. *Nov. 12th, 1895.*

3.—"The Homeric Woman." By THOMAS MARSHALL, M.A. *Dec. 3rd, 1895.*

4.—"British Expansion in Africa." By Capt. F. D. LUGARD, C.B., D.S.O. *Dec. 10th, 1895.*

5.—"Present University Education." By Prof. E. C. CLARK, LL.D. *Dec. 17th, 1895.*

6.—"The New Gases." By Prof. WILLIAM RAMSAY, Ph.D., F.R.S. *Jan. 7th, 1896.*

7.—"The Ghetto." By I. ZANGWILL. *Jan. 21st, 1896.*

8.—"Molière, and his *Bourgeois Gentilhomme.*" By P. H. M. du GILLON. *Feb. 4th, 1896.*

9.—"Warning and Signalling amongst Animals." By Prof. EDWARD B. POULTON, M.A., F.R.S. *Feb. 18th, 1896.*

10.—"John Constable"; illustrated by pictures by the Master. By JAMES ORROCK. *Feb. 25th, 1896.*

11.—"The Character and Extent of Air Pollution in Leeds." By JULIUS B. COHEN, Ph.D. *March 3rd, 1896.*

12.—"History of Mythological Animals in Norman Sculptures." By H. CLIFTON SORBY, LL.D., F.R.S. *March 17th, 1896.*

13.—"Mount Athos and the Monks." By Rev. Prof. J. P. MAHAFFY, D.D. *April 14th, 1896.*

14.—"A *Mappa Mundi* of the 13th Century (with *fac-simile* and lantern illustrations)." By Rev. C. HARGROVE, M.A. *April 21st, 1896.*

In addition to the above meetings, a Special Meeting was held under the joint auspices of the Society and of the Chamber of Commerce on Oct. 15th, 1895, when Mr. A. R. Colquhoun gave a lecture on "The Nicaragua Canal."

During the Christmas Holidays the Curator gave three lectures on "Aquatic Beasts," "Birds' Nests and Eggs," and "How Fossils tell the Earth's History." The lectures were attended by an average of about 150 persons, most of whom remained after the lecture to be present at the demonstration on objects from the Society's collections, illustrative of the topics which had been dealt with.

During the Winter six Afternoon Lectures were delivered in the Museum by Mr. Edward Atkinson, one of the Honorary Curators in Zoology, on the Palestine Map, presented to the Society last year by Mr. W. H. Rinder, who kindly defrayed all expenses incidental to the lectures.

The number of Members and Subscribers is :—

	1896	1895
Original Proprietary Members (78 Shares)...	60	60
New Proprietary Members (121 Shares) ...	82	84
Ordinary Members	2	2
New Ordinary Members	66	68
Annual Subscribers of £1 1s.	120	119
Annual Subscribers of 7s. 6d.	111	122
	441	455

24,476 persons have paid for entrance to the Museum during the year.

In accordance with the recommendations of the Museum Committee extensive alterations have been made in the arrangement of the Museum. The West Gallery of the large Zoological Room is now devoted to the display of certain groups of invertebrate animals, to accommodate which table-cases have been fitted on the floor, and flat cases on the wall spaces. In front of the principals of the roof, a series of cases has been fixed for the exhibition of the examples of the "Life Histories of Injurious Insects." The Bird Room has been so arranged that in it are displayed only such objects as pertain to this class of animal. The Mineral Cases have been placed in the South Geological Room, and there has been a general rearrangement of the cases on the floor of the large Zoological Room. The columns of basalt, from the Giant's Causeway, have been moved to the Outer Vestibule, and the large specimens of fossil coal plants to the Inner Vestibule. The wall-cases in which were contained an exceedingly valuable selection of Stone and Metal Implements, Metal Work and Pottery, in a bad light in the Inner Vestibule, have been removed and fixed round the Staircase-landing where the lighting is excellent.

The lighting of the Museum has been greatly improved by a thorough cleaning of the outside of the glass roof.

The Museum continues to be well used by students, and to them help has been given whenever practicable. Specimens have been lent to the Departments of Biology and Geology of the Yorkshire College; Mr. Kendall, as in previous years, has brought classes of University Extension and Geological students, and other undergraduates of the Victoria University have been allowed to handle specimens, and to refer to the literature on the subjects of study. There have been eight visits from Board Schools, and seventy by specialists desirous of examining the cabinet collections. Permission, too, has been given to an increasing number of students to sketch antiquarian and natural history objects.

Professor Petrie has given a new reading from the coffin of the mummy in the Outer Vestibule, according to which it is that of Nesi Amen, of the date of Amenhotep III., 1400, B.C. The Mummy is probably of a later date, as the labels or straps on it are those of Rameses XII., 1070, B.C.

Several fresh cases of Injurious Insects have been added to the series in the West Gallery.

The display of the transformations of living insects has been unusually good this year, as opportunities were afforded to collect plentifully occurring, and hardy forms, at Knaresbro'. Small aquaria, in which were living examples of coleoptera, hemiptera, mollusca, and in which the development of such amphibia as frogs and newts could be followed, attracted considerable attention.

The donations to the Museum by bequests and gifts have been numerous and valuable, and include a series of Guillemot Eggs and other natural history objects from Mr. H. Bendelack Hewetson, F.L.S., F.Z.S.; Roman antiquities in terra cotta and glass from Rio Tinto, Spain; and sections of wooden water-pipes formerly used in Liverpool, bequeathed by the late Mr. Robt. H. Wood, Headingley. An interesting series of Indian stone arrowheads and scrapers, collected by Mr. E. Jacques, in Alberta, N.W. Canada, and presented by Mr. Edward Atkinson, F.L.S.

A bust of Mr. George Walker, of Killingbeck, author of "The Costume of Yorkshire," modelled by Mr. Thomas Earle, and exhibited at the Royal Academy in 1850, by bequest from the late Mrs. Read, Headingley. A large collection of minerals and oolitic fossils from Mrs. Morley, of Chapel-Allerton. Specimens of molluscs, vermes, crustaceans, and carboniferous fossils from Mr. H. B. Wilson, Armley, and a cabinet and a small series of minerals by Mr. William Ward, Leeds.

Prof. Flinders Petrie has presented a very valuable selection of the alabaster and baked-clay vessels which were used by the "New Race," and which he discovered buried in the older river gravels of the Nile, on the edge of the Libyan desert, between the small towns of Ballas and Nagada. Your Council feel grateful to Prof. Petrie for enabling them to place on permanent exhibition in its Museum objects of such world-wide interest.

The Library has been enriched by a bequest of valuable scientific books, by the late Mr. R. W. Morley, of Chapel-Allerton. Mr. Edward Atkinson has presented the parts of the Journal of the Linnean Society as published, and the gifts of the Trustees of the British Museum, and of the Government of the United States have been numerous. The Council have to thank many kindred societies for their kind help in this respect.

The continuous records of atmospheric changes made with the barograph, on view in one of the windows of the Museum, excite much public interest. On the 9th of January, this year, when the barometric pressure reached the highest point recorded in Britain (31·119 inches in Glasgow), the corrected reading at the Museum was 30·976 inches.

The Council have to record, with regret, the death of Mr. Henry Seebohm, F.L.S., F.Z.S., an Honorary Member of the Society, and one of the most distinguished of British Ornithologists. Mr. Seebohm was a native of Bradford, and for many years a manufacturer of steel at Rotherham. Birds were his

favourite study from an early age, and to increase his collections he made adventurous journeys into Siberia and other distant countries. His "History of British Birds and their Eggs," and his "Geographical Distribution of Plovers, Sandpipers, and Snipes," made him widely known to naturalists. His collections, which were large and valuable, were given or bequeathed to the British Museum.

At the instance of the Council a public meeting was held in the Philosophical Hall, on April 24th, with the object of promoting the national memorial which is being raised to the late Professor Huxley. The meeting was addressed by the Bishop of Ripon, and a short account of Professor Huxley's life-work was read by Professor Miall. A Committee (of which the Mayor of Leeds will act as Chairman), consisting of the members of the Council and other gentlemen interested in the movement was constituted, and it is hoped that a substantial sum of money may be collected from members of the Society and residents in Leeds and the neighbourhood.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1895.

1895.	Mean Temperature.	Mean Height of Barometer (inches).	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	34·6	29·498	4·00	3·87
February...	31·4	29·883	·28	·31
March	42·4	29·431	2·08	1·98
April	47·2	29·623	1·55	1·60
May...	54·9	29·861	·43	·43
June...	58·4	29·837	3·10	2·97
July	59·3	29·599	6·80	5·97
August	61·6	29·597	1·82	1·82
September	60·0	29·667	1·13	·88
October	45·1	29·558	3·32	3·23
November	45·5	29·568	3·10	2·86
December	39·5	29·507	2·83	3·01

Mean monthly temperature—48·32°.

Mean monthly height of the barometer—29·635 inches.

Total rainfall for the year—Museum 30·44 inches; Woodhouse Cliff 28·93 inches. Average rainfall at the Museum for the ten years 1886—1895, 24·91 inches.

Greatest degree of heat, indicated by the thermometer in the shade— 82° on May 30th ; minimum— 9° on February 8th.

Greatest barometric pressure—30·45 inches on May 2nd, the temperature of the mercury being 53°; least pressure—28·44 inches on March 28th, the temperature of the mercury being 43°.

Greatest fall of rain (during 24 hours)—1·44 inches on July 2nd.

The Bench Mark at the corner of the Philosophical Hall is 131·8′ above the Ordnance datum, and ·8′ above the pavement. The cistern of the barometer is 12·8′, the thermometers are 42′, and the rain-gauge is 45′ above the bench mark.

The Hall is situated at 1° 32′ 45″ or 6 min. 11 sec. W., and 53° 47′ 51″ N., and hence $g/g_{45°}$ is 1·000774. Taking the standard height of the barometer to be 30″, and the standard temperature to be 62° F, the height of the homogeneous atmosphere is 27860′. To find the height of a barometer at sea level equivalent to a reading of H″, at a temperature of t° F. different from 62° F., add to the reading H″ (·0054 ∓ ·00001t).

SUNSHINE AT LEEDS IN 1895.

The observations were made by Jordan's Photographic Sunshine Recorder at the following stations:—

1. The Museum of the Philosophical and Literary Society, situate in the centre of the city; elevation above the sea, 145 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the city; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the city; elevation, 475 feet; on the fringe of the borough.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible duration.
JANUARY	1	33·10	12·7
	2	52·0	20·0
	3	62·50	24·2
FEBRUARY	1	75·40	27·5
	2	86·30	31·1
	3	101·10	39·9
MARCH	1	97·30	26·5
	2	108·10	29·4
	3	118·0	32·1
APRIL	1	153·40	37·0
	2	173·20	41·7
	3	179·40	43·3
MAY	1	235·0	48·8
	2	253·50	52·6
	3	269·20	55·8
JUNE	1	225·30	45·7
	2	239·50	48·5
	3	257·40	52·1
JULY	1	198·40	39·9
	2	219·0	44·0
	3	228·40	46·0
AUGUST	1	182·50	40·7
	2	193·30	43·1
	3	211·0	47·0
SEPTEMBER	1	183·40	48·7
	2	201·50	53·5
	3	219·50	58·3
OCTOBER	1	97·30	29·6
	2	97·30	29·6
	3	118·10	35·9
NOVEMBER	1	28·40	10·8
	2	28·40	10·8
	3	35·10	13·2
DECEMBER	1	18·10	7·4
	2	18·40	7·7
	3	20·0	8·2

SUMMARY FOR THE YEAR

	Hours recorded. Hours.	Mins.	Difference from mean of 7 years in hours.	Per cent. of possible duration.
Museum ..	1,530	0	+605·57	34·3
Woodhouse Cliff	1,672	50	+525·09	37·3
Lawnswood ..	1,821	30	+559·41	40·8

37·5 per cent. mean for 1895.
29·0 ,, ,, 1894.
31·6 ,, ,, 1893.
27·5 ,, ,, 1892.
22·2 ,, ,, 1891.

24·4 per cent. mean for 1890.
20·7 ,, ,, 1889
19·9 ,, ,, 1888.
26·6 ,, ,, eight years.

The Meteorological Office publishes the following records of sunshine for 1895, as observed at stations taken as representing specified districts:—

	Hours recorded.	Difference from mean.	Percentage of possible duration.
Scotland, N. (Stornoway, &c.) ..	1,083	+ 1	28
,, E. (Aberdeen, Marchmont) ..	1,355	+146	35
,, W. (Glasgow; Douglas, Isle of Man) ..	1,410	+ 98	37
England, N.E. (Durham, York) ..	1,461	+229	33
,, N.W. (Stonyhurst, Blackpool, Llandudno)	1,343	+206	34
,, Mid. (Cirencester, Oxford, &c.) ..	1,575	+244	36
,, S. (London, Hastings, Southampton, &c.)	1,776	+206	39
,, E. (Hillingdon, Geldestone, Cambridge)	1,709	+225	39
,, S.W. (Pembroke, Falmouth, Plymouth, &c.)	1,825	+231	41
Ireland, N. (Armagh, Markree Castle) ..	1,355	+151	31
,, S. (Dublin, Parsonstown, Valencia) ..	1,508	+ 71	34
Channel Islands (Jersey) ..	2,034	+253	48

SUMMARY.

35·8 per cent. mean for United Kingdom, 1895.
31·1 ,, ,, ,, 1894.
37·0 ,, ,, ,, 1893.
35·2 ,, ,, ,, 1892.
32·6 ,, ,, ,, 1891.

30·7 per cent. mean for United Kingdom, 1890.
29·2 ,, ,, ,, 1889.
27·5 ,, ,, ,, 1888.
32·38 ,, ,, ,, 8 years.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the year 1895-6.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1895		—		0	19	0
,, Balance in Bank do.		—		44	14	0
,, Annual Subscriptions, viz.:—						
76 New Proprietary Members, at 21s. ...	79	16	0			
2 Original Ordinary ,, 42s. ...	4	4	0			
61 New Ordinary ,, 21s. ...	64	1	0			
119 Annual Subscribers, at 21s.	124	19	0			
107 Annual Subscribers, at 7s. 6d. ...	40	2	6			
,, Arrears	2	2	0			
				315	4	6
,, Rent, viz.:—						
Cellars	40	0	0			
Lecture Room	279	16	3			
				319	16	3
,, Receipts from Visitors to Museum ...				101	19	8
,, Sale of Guides	2	19	2			
,, Bank Interest	0	12	0			
,, Sundries	1	16	6			
				5	7	8
,, Sale of Forfeited Share				5	0	0
				£793	1	1

PAYMENTS.	£	s.	d.	£	s.	d.
By Repairs and Alterations	81	10	3			
,, Rates and Taxes	43	14	2			
,, Fire Insurance	12	10	0			
,, Coals, &c.	20	15	10			
,, Gas	22	14	7			
,, Cleaning	14	3	1			
				195	7	11
,, Salaries and Wages	305	19	0			
,, Fee to Auditor	2	2	0			
				308	1	0
,, Collections, Library, and Scientific Apparatus... ...				50	17	8
,, Postages	9	9	6			
,, Advertising and Printing	33	14	9			
,, Lectures	92	18	6			
,, Sundries	16	19	2			
				153	1	11
,, Furniture				23	2	0
,, Electric Light Supply				6	11	11
,, Balance at Bank				55	18	8
				£793	1	1

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 22nd, 1896.

BEEVERS & ADGIE,
CHARTERED ACCOUNTANTS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1895-6.

ZOOLOGY.

A series of Guillemot Eggs, from Flambro' ..... Dried Specimen of Flying - fish, (*Exocœtus spilopterus*), caught by Captain Hewetson, R.N., off St. Helena	Mr. H. Bendelack Hewetson, F.L.S., F.Z.S., Leeds.
Specimens of British Shells ..... Spirit Specimens of Molluscs, Vermes, and Crustaceans	Mr. H. B. Wilson, Westfield, Armley.
Green Woodpecker (*Gecinus viridis*), mounted on stand	Mrs. Chorley, Headingley.

PALÆONTOLOGY.

Valuable Collection of Bath and Inferior Oolite Fossils ..... Plant remains from the Elland Flagrock, Gledhow	Mrs. Morley, Westfield Terrace, Chapel-Allerton.
Plant remains from the Barnsley Coal Measures	Mr. H. B. Wilson, Westfield, Armley.
Calamites, &c. from the Grit Rock, Edge Quarry, Thornhill.....	Mr. Walter Wood, Thornhill.

MINERALOGY.

Specimen of Kaolinite (in powder) from near Skipton	Mr. J. J. Wilkinson, Burnside, Skipton.
Collection of over three hundred specimens of Minerals.....	Mrs. Morley, Westfield Terrace, Chapel-Allerton.
A series of Mineralogical specimens in Cabinet.....	Mr. Wm. Ward, Leeds.

ARCHÆOLOGY & ETHNOLOGY.

Two Vases of Alabaster and nineteen Water Vases, Bowls, and other vessels of baked clay, used by the "New Race," discovered by Prof. Petrie, on the edge of the Libyan Desert, Egypt	Prof. W. M. Flinders Petrie, D.C.L., LL.D., London.
Shell of Triton *(T. variegatus)* used as a fog-signal by the fishermen of Catleen Bay, Gibraltar	Mr. H. Bendelack Hewetson, F.L.S
One Penny Token, New Brunswick, 1843	Mr. Oliver Marsden, Leeds.
Bolas from South America	Mrs. Burton, Roundhay Road, Leeds.
Roman Lamp and Jar of Terra Cotta and Glass Bottle from the Mines at Rio Tinto, Spain..... Two sections of the Wooden Water-pipes, once laid under certain parts of Liverpool, for the supply of fresh water.....	Bequeathed by the late Mr. Robert Henry Wood, Headingley.
Collection of Flint, Quartzite, Obsidian and Siliceous-clay Arrowheads and Scrapers; Fragments of Pottery and Spearheads of Iron, collected by Mr. Edward Jacques from the Indians of N.W. Canada	Mr. Edward Atkinson, F.L.S., Harrogate.
Bust in plaster of Mr. George Walker, formerly of Killingbeck Lodge, Leeds; by Thomas Earle	Bequeathed by the late Mrs. Read, Woodhouse Cliff, Leeds.
One Pound Leeds Bank Note	Mr. Samuel Falshaw, Headingley.

PHOTOGRAPHY.

Cabinet Photograph of a Flowering Yucca *(Y. gloriosa)* Napier, N.Z....	Mr. W. D. Barbour, Providence Avenue, Leeds.

PUBLICATIONS.

Catalogue of the Library of the Manchester Museum	The Keeper of the Manchester Museum.
Report of the Manchester Museum ...	
Handy Guide to the Manchester Museum	
Catalogue of the Hadfield Collection of Shells, from the Loyalty Ids., in the Manchester Museum	
Catalogue of the Library of the Leeds Grammar School.....	The Rev. J. H. D. Matthews, M.A.
Handbooks on British, Colonial, and Foreign Patents, Trade Marks, and Designs.....	The Author, Mr. C. A. Day, High Holborn, London.
A New Story of the Stars (pamphlet)	Prof. Bickerton, Christchurch, N.Z.
On the Immortality of the Cosmos ...	
Notes on Australian and other Stone Implements (pamphlet)	The Author, Prof. Liversidge.
Boleite, Nantokite, Kerargyrite, and Cuprite from Broken Hill, N.S.W. (pamphlet)	
Œuvres de Camper (planches).....	Mr. Edward Atkinson, F.L.S
Spiders of Great Britain, Pts. 1 & 2, by J. Blackwall (Ray Soc.)	Bequeathed by the late Mr. R. B. Morley, M.R.C.S., Chapel-Allerton.
Nudibranchiate Mollusca, Pts. 1—7, by J. Alder and A. Hancock (Ray Soc.)	
Memorials of Ray (Ray Soc.)	
Mineralogy by J. D. Dana, 1844	
Plates of Geological Formations, by Wm. Smith	
Lectures on Natural Philosophy, Vols. 1 & 2, by Dr. Thos. Young	
Giessen Outlines of Analysis by Dr. Hy. Will	
Experimental Researches in Electricity, Vols. 1 & 2 by M. Faraday	
Brander's Hampshire Fossils by Wm. Wood	
Memoirs of Ichthyosauri and Plesiosauri by Thos. Hawkins.....	
Pathological Histology by Gluge.....	
Memoirs of the Geol. Surv. of the U.K., Decades 5 & 7	
Lichenes Britannici Pts. 4—6, 8, 11, 14—16, by J. Bohler	

Catalogue of the Spiders of Burma ...	The Trustees of the British Museum.
Catalogue of Fishes, Vol. I, 2nd Ed.	
An Introduction to the Study of Rocks	
Catalogue of Birds, Vols. XXV, XXVII	
Catalogue of Fossil Fish, Vol. III ...	
Fossil Plants of the Wealden, Pt. II...	
Guide to the British Mycetozoa	
Fauna der Gaskohle, Bd. III, Heft 4	Purchased.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-WEEKLY.

Bollettino delle Publicationi Italiane	The Compiler.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	Purchased.
Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.

Journal of the Linnean Society	Mr. Edward Atkinson, F.L.S.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions.....	Purchased.
Proceedings of the Royal Society ...	The Society.
Proceedings of the Royal Institution of Great Britain	The Institution.
Publications of the Ray Society	Purchased.
Abridgments of Specifications for Patents, Period 1884—88	The Comptroller General of Patents.
British Association Report.....	The Association.
Greenwich Observations, 1892 ..... Cape Catalogue, Epoch, 1885	The Astronomer-Royal.
Memoirs of the Royal Astronomical Society	The Society.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall, 1894	Purchased.
Monograph of the Palæontographical Society, Vol. XLIX	Purchased.
Proceedings of the Yorkshire Geological and Polytechnic Society.....	The Society.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Liverpool Geological Society.....	The Society.
Journal of the Liverpool Geological Association	The Association.
Transactions of the Manchester Geological Society	The Society.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne.....	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philosophical Society	The Society.
Report of the Bradford Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society	The Society.

Report of the Halifax Literary and Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society	The Society.
Report of the Committee of Leicester Town Museum	The Museum.
Report of the Royal Institution, Hull	The Institution.
Report of the Meteorological Department of the Borough of Southport, 1894.	The Meteorological Observer.
Annual Report of the Brighton Town Museum	The Museum.
Annual Report, Middlesex Hospital...	The Hospital.
Annual Report of the Birkenhead Literary and Scientific Society	The Society.
Proceedings of the Liverpool Literary and Philosophical Society, Vols. 44-49.	The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association	The Association.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society	The Society.
Annual Report of the Sheffield Literary and Philosophical Society	The Society.
Annual Report of the Chester Society of Natural Science and Literature	The Society.
Transactions of the Leeds Naturalists' Club and Scientific Association.....	The Association.
Journal of the Royal Institution of Cornwall	The Institution.
Annual Report of the Royal Cornwall Polytechnic Society, 1894	The Society.
Report of Associated Architectural Societies	The Society
Journal of the Chester Archæological and Historic Society	The Society.
Geological Record	Purchased.

Transactions of the Yorkshire Naturalists' Union	The Union.
Proceedings of the Royal Society of Edinburgh ..... Transactions do. do.	The Society.
Transactions of the Edinburgh Geological Society.....	The Society.
Proceedings of the Glasgow Philosophical Society, 1894-5	The Society.
Proceedings of the Berwickshire Naturalists' Club	The Club.
Scientific Proceedings of the Royal Dublin Society..... Scientific Transactions do.	The Society.
Transactions of the Royal Irish Academy ..... Proceedings do. do.	The Academy.
Journal of the Royal Geological Society of Ireland	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	The Club.
Publications of the Royal Swedish Academy of Sciences.....	The Academy.
Papers of the Royal University of Norway	The University.
Bulletin of the Geological Institution of the University of Upsala, 1894	The Institution.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger.....	Royal Danish Society of Sciences.
Bulletin Société Impériale, Moscow ...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deutschen Akademie der Naturforscher	The Academy.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien ...	The Society.
Memoirs of the National Academy of Sciences	The Academy.

Report of Australasian Association for the Adv. of Science, Vol.V.	The Association.
Journal and Proceedings of the Royal Society of New South Wales	The Society.
Journal of the Royal Geographical Society of Australasia	The Society.
Wealth and Progress of New South Wales	The Agent-General.
Records of the Geological Survey of N.S.W.	The Surveyor.
Memoirs of the Geological Survey of N.S.W.	
Annual Report and Papers of the Department of Mines and Agriculture, N.S.W.....	The Department.
Prodromus of the Zoology of Victoria	The Editor.
Records of the Australian Museum	The Trustees.
Report of the Trustees of the Australian Museum.....	
Proceedings of the Royal Society of Queensland	The Society.
Transactions and Proceedings of the New Zealand Institute	The Institute.
Papers and Proceedings of the Royal Society of Tasmania	The Society.
Proceedings and Transactions of the Royal Society of Canada, Vol. XII.	The Society.
Proceedings of the Canadian Institute	The Institute.
Annual Report do.	
Transactions do.	
Proceedings and Transactions of the Nova Scotian Institute of Natural Science	The Institute.
Annual Report Hamilton Public Library, Ontario, Canada	The Librarian.
Journal and Proceedings of the Hamilton Association	The Association.
Geological and Natural History Survey of Canada	Department of the Interior.
Annual Report and Papers—do.	
Contributions to Canadian Palæontology	

Memorias de la Sociedad Científica (Mexico)	The Society.
" Boletin Mensual " Observatorio Meteorologico-Magnetico, Central de Mexico	The Editor.
Annuario del Observations Astrónomico Nacional, Mexico.....	The Astronomer.
Boletin del Observatorio Astronómico Nacional de Tacubaya	The Observer.
Report of the Muséum National, Rio-de-Janeiro.....	Directeur Général.
Archivos do.	
Cape Meridian Observations	Cape Astronomer-Royal.
Report of H.M. Astronomer at the Cape of Good Hope to the Secretary of Admiralty, 1894	
Transactions of the American Philosophical Society	The Society.
Proceedings do.	
United States Geological Survey, Annual Report.....	The Department.
Contributions to American Ethnology.	
United States Geographical and Geological Survey	
United States Department of Agriculture, Publications of	The Department.
Jack Rabbits of the United States ...	
Common Crow do. do. ...	
Pocket Gophers do. do. ...	
Report of the Smithsonian Institution	The Institution.
Smithsonian Miscellaneous Collections	
Smithsonian Contributions	
Annual Reports of the Bureau of Ethnology	
Miscellaneous Publications of the Bureau of Ethnology	
An Account of the Smithsonian Institution, its origin, history, objects, and achievements	
The Siouan Tribes of the East Chinook Texts	
Archæologic investigations in James and Potamac Valley	

Proceedings of United States National Museum Report do. do. Bulletins do. do.	The Museum.
Transactions of the Academy of Science of St. Louis	The Academy.
Proceedings of the Academy of Natural Sciences of Philadelphia Papers do. do.	The Academy.
Proceedings of the American Academy of Arts and Sciences	The Academy
Transactions of the Wisconsin Academy of Sciences, Arts, and Letters, Vol. X, 1894-5	The Academy.
Memoirs of the National Academy of Sciences, Washington	The Academy.
Proceedings of the Davenport Academy of Natural Science	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba	The Society.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science	The Union.
Proceedings of the Boston Society of Natural History, U.S.A. Memoirs do.	The Society.
Bulletins of the Essex Institute, U.S.A.	The Institute.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College Annual Report of Harvard College, 1894-5	The College.
Harvard University Catalogue	The University.

Transactions of the Astronomical Observatory of Yale University ...	The University.
Annual Report do.	
Report of the President of Yale University	
Catalogue do. do.	
Journal of the Elisha Mitchell Scientific Society, 1895, Part I. ...	The Society.
Tufts College Studies.....	The College.
Transactions of the Meriden Scientific Association	The Association.

LIST OF OFFICERS AND COUNCIL,

1896-7.

OFFICERS.

PRESIDENT	EDMUND WILSON.
VICE-PRESIDENTS. . .	REV. CHAS. HARGROVE, M.A. NATHAN BODINGTON, M.A., Litt.D.
HONORARY SECRETARIES .	ARTHUR SMITHELLS, B.Sc. E. KITSON CLARK, M.A.
TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	J. A. NUNNELEY, M.B.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. LOUIS C. MIALL, F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. J. H. D. MATTHEWS, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	THOMAS SCATTERGOOD.
JAMES E. BEDFORD, F.G.S.	T. P. TEALE, M.A., F.R.S.
T. WALTER HARDING.	J. H. WICKSTEED, M.Inst.C.E.
THOMAS MARSHALL, M.A.	J. J. WILLSON.
RICHARD REYNOLDS, F.I.C.	RICHARD WILSON.

Secretary . . .	W. F. HUSBAND, LL.B.
Curator . . .	HENRY CROWTHER, F.R.M.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1896-7.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	*Aldam, Wm.	
3	Armitage, Robert	Farnley.
4	Arthington, Robert	Headingley.
49	Baines, Mrs. Arthur	The Heath, Adel.
5	*Baines, Herbert S.	
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, Sir John, Bart.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	Broomfield Crescent, Headingley.
11	*Brown, James	
31, 62	Brown, Wm. J. (2 shares)	The Mount, Ackworth.
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	Greek Street.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
26	*Ellershaw, John	
28	Empson, Christopher	Mill Mount, York.
29, 48	Ford, J. R. (2 shares)	Quarry Dene, Weetwood.
33	Goodman, Benjamin	Gledhow House.
36-8	Gott, Wm. Henry (3 shares)	

61	Greenhow, Wm. T. .	NewtonCottage,Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
27	Hall, William .	Hillside, Headingley.
39	*Harding, T. R. .	
64	Harding, Thomas Walter .	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Regent Villas, Cumberland Rd.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	102, Lexham Gardens, Kensington, S.W.
30	Horsfall, J., M.A., F.R.C.S.	Cambray, Richmond Hill, Bournemouth, E.
47	Ingham, Constantine .	3, Belgrave Crescent, Scarbro'.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	TheLimes, Kirkstall Lane, Leeds.
57	Lupton, Charles .	The Harehills, Roundhay.
32	Lupton, Edward Basil .	Moorlands, Headingley.
53	Lupton, Francis M., M.A.	Rockland, Newton Park.
56	Lupton, Sydney, M.A. .	A. Audley Mansions, 44, Mount Street, London, W.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	*Marshall, Arthur, F.G.S. .	
60	*Marshall, John, M.A. .	
66	Marshall, Reginald Dykes	Castlerigg Manor, Keswick.
67	Marshall, V. A. E., B.A. .	Monk Coniston, Ambleside.
50	Mason, Charles Letch .	Moorland Terrace.
65	Miall, Prof. Louis C., F.R.S.	Crag Foot, Ben Rhydding.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	
10	Streatfeild, Richard James.	The Rocks, Uckfield, Sussex.
71	Tatham, Miss .	Springfield Mount.
52	Taylor, Benjamin .	20, Moorland Road.

72	Teale, Thomas Greenwood	36, Trinity Street.
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	
34, 35	Truro, The Bishop of (2 shares)	Trenython, Par Station.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
17	Walker, Reginald Thomas	1, Furnival's Inn, Holborn, London, E.C.
76	Ward, William .	12, Bank Street.
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	Denison Hall.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S..	Langholme, Franklin Road, Harrogate.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	*Baines, Frederick .	
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
62	Barley, D. H., M.D. .	Grove House, Burmantofts.
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford .	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	2, East Parade.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
89	Boston, Richard .	Boar Lane.
10	Bowling, John .	Newstead House, Spencer Place.
49	Braithwaite, William .	Throstle Nest, Horsforth.
5, 6	Brown, G. W. (2 shares) .	78, Belsize Park Gardens, Hampstead, London.
1	Burrell, Benjamin A., F.I.C.	5, Mount Preston.
86	Carter, J. B. .	Elm House, Potternewton.
9	*Chadwick, William .	
14	Conyers, W. H. .	The Hills, Ilkley.

45	Craven, John .	3, Beech Grove Terrace.
104	Crawford, John William .	Newton Lane.
26	Dawson, Oswald .	Albion Walk Chambers, Leeds.
19	Fairbairn, Sir Andrew .	Askham Grange, near York.
118	Flitch, John R. .	Moortown.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gibson, Rev. E. C. S., D.D.	Leeds Vicarage.
102-3, 106-10, 114-15	Gott, William Henry (P) (9 shares) .	
22	Hargrave, Charles .	
23	*Hargrave, James .	
7	Hargrove, Rev. C., M.A. .	10, De Grey Terrace.
16	Harvey, William .	The Grove, Roundhay.
81	Hatch, S. C. .	
44	Hepper, Mrs. J. H. .	Suffolk Lodge, Harrogate.
51	Hoggard, Alfred .	25, Cavendish Road.
98	Howgate, William .	21, Blenheim Terrace.
36	*Hudson, Henry .	
84	Hummel, Prof. J. J. .	152, Woodsley Road.
120	Ingham, Samuel .	Headingley Hall.
56	James, Christopher William	South View, Potternewton Lane.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Harehills, Leeds.
40	Joy, William Lomas .	Brentwood, Beverley.
43	*Kitson, James .	
46	Kitson, J. Hawthorn .	Elmete Hall, Roundhay.
47	Kitson, Sir Jas., Bart., M.P.	Gledhow Hall.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.
90	Lawson, Frederick W. .	Woodfield, Wood Lane.
50	Leather, Ernest Arthur .	Birstwith Hall, Ripley.
53	Lupton, Mrs. Arthur .	Headingley.
95	Lupton, Arthur G. .	Wellington Street.
8	Lupton, Henry .	Lyndhurst, Headingley.
99	Lupton, Hugh .	Mount Pleasant, Leeds.
54	*Lupton, Joseph .	

55	Lupton, Mrs. John .	Moorlands, Headingley.
21	Lupton, Oliver .	Shireoak Road, Headingley.
63, 100	Lupton, Fras. Martineau, M.A. (P) (2 shares) .	Rockland, Newton Park.
88	*McGuire, Thomas .	
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Regent Villas, Cumberland Road.
60	Marshall, Thomas, M.A. .	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D. .	Grammar School, Leeds.
27	Maude, William Henry .	Middleton Lodge, Leeds.
117	Middleton, Arthur .	Calverley Chambers, Victoria Sq.
34	Muir, Prof. James .	3, Hillary Place.
66	Nicholson, A. H. .	
30	Nicholson, Marshall .	Middleton Hall, near Leeds.
64	*Nickols, Richard .	
67	Nunneley, A. G. .	Wanstead House, Burley, Leeds.
68	Oxley, James Walker .	28, Commercial Street.
93	Palmer, Henry John .	55, Albion Street.
28	*Passavant, P. W. .	
82	Pearson, John Thomas .	The Hall, Melmerby, S.O.
11	Price, Mrs. William N. .	Hillary Place.
38	*Ralph, John, M.A. .	
33	Ransome, Prof. Cyril, M.A.	3, St. Chad's Villas, Headingley.
69	Reynolds, Richard, F.I.C. .	Cliff Lodge, Hyde Park.
72	Rider, James .	8, Beech Grove Terrace.
18	Robson, A.W. M., F.R.C.S.	Church Lane House, Adel.
105	Ryder, Charles .	Gledhow Hill.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, John Edward .	Gledhow Wood, Gledhow.
57	Stringer, John William .	Inglebank, Far Headingley.
73	Teale, T. P., M.A., F.R.S. .	North Grange, Headingley.
74	Teasdale, Washington .	Headingley.
76	*Tennant, Thomas .	
78	*Tetley, F. W. .	
58	Thompson, Chas. F. .	Rowangarth, Ben Rhydding.

79	*Turner, Richard B.	
80	Wailes, William	2, Albion Place.
71	Ward, John	Moor-Allerton House.
111	*Watson, William Henry	
41	Webb, Joseph S.	26, Park Row.
97	Weston, Edward	Newton Park Villa, New Leeds.
42	Whiting, John	Cliff Road.
83	Wicksteed, J.H., M.Inst.C.E.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M.	Brecondene, 220, Newton Hill.
85	*Wilson, John	
17	Wilson, Richard	28, Commercial Street.
35	Wood, Philip T.	22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah	29, Meadow Lane.
13	Stratten, Rev. J. R.	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert	13, St. John's Terrace.
2	Baines, Talbot, B.A.	Hanover Square.
48	Barran, Rowland H.	Beechwood, Roundhay.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E., F.G.S.	Arncliffe, Shireoak Road.
7	Best, Mrs. William W.	31, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	Shireoak Road, Headingley.
8	Bolland, W. T.	Oak Lea, Harrogate.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George	Bagby Fields.
72	Brigg, Matthew A.	12, Sholebroke Avenue.
11	Briggs, Riley	Springfield Mount.
75	Brunton, George	Hillary Mount, Woodhouse Lane.
18	Clark, E. Kitson, M.A.	13, Wellclose Place.

14	Corson, George .	Wood Lane, Headingley.
41	Crossley, Thomas .	Highfield House, Headingley.
33	Denison, Samuel .	32, Clarendon Road.
16	Denny, T. G. .	
32	*Dixon, A. S. .	
65	Eddison, Octavius, B.A. .	St. Helen's, Adel.
20	Eddison, Robert William .	The Manor, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William .	
69	Fraser, James B. .	8, Park Square.
24	Gascoigne, F. C. Trench .	Parlington Park, nr. Garforth.
25	Goodman, Prof. John .	The Yorkshire College.
35	Grahl, Conrad E. .	Ashwood, Headingley.
12	Hadow, Reginald T. .	
42	Hannam, S. J. W. .	44, Bank Street.
27	*Hargrave, John .	
60	Harland, J. W. .	Headingley.
28	Hepper, John .	Clareville, Headingley.
30	Hobson, Alfred .	8, Ladywood Villas, Roundhay.
80	*Holmes, Joseph .	
81	*Holroyd, James .	
31	Illingworth, William .	Flower Bank, Burley, Leeds.
6	Jackson, Richard .	Beech Villa, Cardigan Road.
34	Jackson, Rt. Hon. W. L., M.P. .	Allerton Hall, Leeds.
67	Jefferson, Robert P. .	26, Spencer Place.
63	*Jowitt, Miss E. M. .	
38	*Lawson, Thomas .	
39	*Lawson, John .	
88	Legard, Albert G., M A. .	Balliol House, Harrogate.
23	Lupton, Prof. Arnold .	6, De Grey Road.
44	McCheane, Miss .	Moor Cottage, Adel.
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch (P).	Moorland Terrace.
9	Mathers, John Shackleton.	Hanover House, Leeds.

46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	*Morley, R. B. .	
49	*Myers, W. C. .	
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Springwell House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
51	*Nunneley, Thomas .	
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Bramley Grange, Thorner.
55	Nussey, Mrs. S. L. .	Potternewton Hall.
56	Nussey, Peter .	Springville, Shaw Lane.
43	Powolny, E. Adolph .	Hillary Place.
59	Ramsbotham, S. H., M.D. .	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	Riley, H. W. .	131, Briggate.
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	20, Call Lane.
68	*Smith, William Farrar .	
76	Smithells, Prof. A., B.Sc. .	The Yorkshire College.
37	Snowdon, Miss .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., M.A.	Rupert Lodge, Grove Road.
77	Titley, Mrs. Anthony .	Manor House, Victoria Grove.
78	Titley, John A. .	Newton Hill, Leeds.
79	Tottie, Mrs. J. W. (P) .	
64	Tweedale, John .	12, South Parade.
82	Walker, H. B. .	
83	Ward, Edmund .	19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S. .	Buckingham Ter., Headingley.
90	Ward, William (P) .	12, Bank Street.
3	Webb, William Henry .	Aire Street.
85	Willson, J. J. .	Ballamona, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Albrecht, Horace	Springwood Road, Roundhay.
Armistead, Edwin	39, Louis Street.
Asquith, John Robert	Bond Place.
Baines, Miss	Aysgarth, Headingley.
Bakewell, William	38, Park Square.
Barran, Alfred	Cumberland Road, Headingley.
Barran, Mrs.	Weetwood, near Leeds.
Bartholomew, W. H., C.E.	Ridge Way House.
Beaumont, Prof. R.	14, Regent Park Avenue.
Bedford, Charles S.	Broomleigh, Chapel Lane.
Best, Rev. J. H., B.Sc.	Stanningley Rectory.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	Wynneholme, Far Headingley.
Brown, F. H., M.A.	Headingley Hill School.
Brown, George	14, Westfield Terrace, Chapel-Allerton.
Buckley, J. C.	Longfield, Headingley.
Bulmer, Charles	Blenheim Lodge.
Burrows, Rev. W. O.	Clergy School, Leeds.
Butler, Bernard F.	The Vesper Lodge, Kirkstall.
Butler, Edmund	Kirkstall Forge.
Cameron, Dr. Spottiswoode	Ridge Mount, Cliff Road.
Chadwick, Charles M., M.A., M.D.	29, Park Square.
Chorley, R.	Basinghall Street.
Clark, Miss	Potternewton.
Clark, Miss Alice	35, Mount Preston.
Cliff, Walter	Western Flatts, Wortley.
Cobb, J. W., B.Sc.	16, Ashville Avenue, Cardigan Road.
Cohen, Dr. J. B.	15, Regent Park Avenue.
Connal, B. M., M.A.	13, Beech Grove Terrace.
Crampton, W. T.	Parcmont, Roundhay.
Croysdale, Charles	Cardigan Road, Headingley.

Croysdale, John	Westfield, Chapel-Allerton.
Dalton, George	Regent Villas, Cumberland Rd.
Dickinson, Brow	Rosemont, Bramley.
Dodd, Surgeon-Major A., M.S.	10, Louis Street.
Dodgshun, C. C.	22, Springfield Mount.
Dodgson, A.	Southleigh, Headingley.
Elliot, Douglas	28, Bond Street.
Ellison, James Edward	10, De Grey Road.
Firth, William	Ridge End Villas, Headingley.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Gardner, Wilson	Brookfield Terrace, Headingley.
Gillespie, C. M., M.A.	The Yorkshire College.
Glover, Frederick, M.A.	16, De Grey Road.
Gordon, George	The Yews, North Hill Road.
Green, John H.	Horbury, near Wakefield.
Green, William	1, Tanfield Place.
Griffith, Prof. T. W., M.D.	Park Square.
Haigh, F.	14, Monkbridge Road, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Harper, Alfred	Eccleshill, near Bradford.
Hartley, R. N., M.B.	38, Cookridge Street.
Hassé, A.	31, Commercial Street.
Hebblethwaite, Rhodes	5, Grosvenor Road, Headingley.
Hellier, J. B., M.D.	1, De Grey Terrace.
Hewetson, H. B.	9, Hanover Square.
Hindle, J. E.	10, Park Row.
Hirsch, Paul	29, Cookridge Street.
Holbrook, W.	St. Ann's Villas, Far Headingley.
Ingle, Herbert	Yorkshire College.
Jefferson, Miss M.	4, Woodhouse Square.
Jessop, T. R., F.R.C S.	Roundhay Mount.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.

Kennedy, Miss	St. Mary's Vicarage.
Kitson, F. J.	Oatlands, Burley, Leeds.
Knight, Miss	Far Headingley.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lean, W. S.	7, Woodsley Terrace.
Leigh, Percy	6, Portland Crescent.
Littlewood, H., F.R.C.S.	Park Square.
Mackey, W. M., F.C.S.	Victoria Chambers, South Parade.
Manley, Miss	Cromer Hall, Leeds.
Megson, Albert	Spencer Place, New Leeds.
Moynihan, B. G. A., M.B.	33, Park Square.
Mozley, J. R., M.A.	Southleigh, Headingley.
Murphy, Albert J.	Preston House, Tonbridge Street.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Moorfield House, Headingley.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Phillips, John Henry	Hazel House, Methley.
Powell, William	4, Queen Square.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Riley, Thomas	26, Grove Terrace, Leeds.
Rinder, W. H.	St. Ann's Lane, Burley.
Roadhouse, J. W.	17, Louis Street, New Leeds.
Robinson, Edmund	42, Park Square.
Rogers, Prof. L. J., M.A., Mus.B.	13, Beech Grove Terrace.
Rowe, E.	3, The Villas, Garforth.
Rumboll, Sydney	Hope Villa, Woodhouse Lane.
Sanders, T. W.	5, Blenheim Square.
Saville, H.	35, Ash Grove, Headingley.
Scatcherd, Mrs. Oliver	Morley, near Leeds.
Slade, Robert	14, Springfield Mount.

Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Stables, Marshall	Hope Villa, Armley.
Stockdale, Mrs. T.	Spring Lea.
Stuhlmann, Mrs.	Cavendish House, Cavendish Rd.
Sykes, Arthur	Roundhay Grange.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Teale, Lionel H.	North Grange, Headingley.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Wager, Harold	Bank Villa, Stainbeck Lane.
Walker, A. T.	1, Atkinson Street, Hunslet.
Walker, H. Secker, F.R.C.S.	Park Square.
Walker, James	Newton Park.
Walker, George	Do.
Watson, Charles	Burton Grange, Far Headingley.
Whitham, T.	Bramhope.
Willans, J. W.	Roxburghe, Harrogate.
Wilson, D'Arcy B.	Seacroft.
Wood, Robert	27, Cardigan Road.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Springwood Road, Roundhay.
Armistead, Mrs.	39, Louis Street, New Leeds.
Barran, Miss Ruth	Weetwood, near Leeds.
Barran, P. A.	Do.
Barran, J. N.	Do.
Beaumont, Mrs. R.	14, Regent Park Avenue.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Best, Mrs.	Stanningley Rectory.
Birch, Mrs.	16, De Grey Terrace.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	Wynneholme, Far Headingley.
Brigg, Miss Mary	12, Sholebroke Avenue.

Brunton, Mrs.	Hillary Mount.
Brunton, Miss	Do.
Bulmer, Miss	Blenheim Lodge.
Bulmer, Jasper	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Butler, Mrs. B. F.	The Vesper Lodge, Kirkstall.
Cameron, Mrs.	Ridge Mount, Cliff Road.
Cohen, Mrs. J. B.	15, Regent Park Avenue.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Charles	Do.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. C.	Cardigan Road.
Croysdale, Mrs. J.	Westfield, Chapel-Allerton.
Croysdale, Miss	Do. do.
Dalton, Mrs. G.	Regent Villas, Headingley.
Day, Miss	Mrs. Stuhlmann, Cavendish Rd.
Dodgshun, Mrs. C. C.	22, Springfield Mount.
Dodgson, Mrs.	Southleigh, Headingley.
Ellison, Miss	10, De Grey Road.
Glover, Miss	16, De Grey Road.
Glover, Miss Mary	Do.
Green, Miss	1, Tanfield Place.
Green, Miss Ethel	Do.
Haigh, Miss	14, Monkbridge Road, Headingley.
Haigh, Miss E.	Do. do.
Hallilay, Mrs.	28 Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hassé, Mrs.	31, Commercial Street.
Hassé, Eric	Do.
Hebblethwaite, Mrs.	5, Grosvenor Road, Headingley
Hellier, Mrs.	1, De Grey Terrace.
Hepper, Mrs. J. A.	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.

Hirsch, Mrs. Paul	29, Cookridge Street.
Hirsch, Miss Annie	Do.
Illingworth, G. N.	Flower Bank, Burley.
Jackson, Miss	Allerton Hall, Leeds.
Jessop, Miss	Roundhay Mount.
Jessop, Miss Maude	Do.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Miss	Do.
Josephy, Miss B.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, H.	Do.
Kitson, Mrs. F. J.	Oatlands, Burley, Leeds.
Lupton, Mrs. A.	6, De Grey Road.
Mathers, Miss	Hanover House.
Matthews, E. D.	Grammar School, Leeds.
Morley, Mrs.	14, Westfield Terrace, Chapeltown.
Myers, Miss	Mrs. Stuhlmann, Cavendish Rd.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Nicholson, Mrs. J. C.	Moorfield House, Headingley.
Nicholson, Miss	Do. do.
Nicholson, W. E.	Do. do.
Nussey, Miss	Potternewton Hall.
Nussey, Miss E.	Springville, Shaw Lane.
Nussey, Miss M.	Do. do.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss	Mrs. Stuhlmann, Cavendish Rd.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	Cliff Road.
Rickards, Miss	Wortley.
Rumboll, Mrs.	Hope Villa, Woodhouse Lane.
Ryder, Miss E. I.	Gledhow Hill.
Ryder, Miss Louisa	Do.
Saville, Miss S. E.	35, Ash Grove, Headingley.

Scattergood, Miss	41, Park Square.
Slade, Mrs. R.	14, Springfield Mount.
Slade, Miss E. M.	Do.
Slade, R. H.	Do.
Somers, Mrs.	48, Woodhouse Lane.
Stables, Mrs. M.	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Miss E.	Spring Lea, Springfield Mount.
Stockdale, Miss M. B.	Do. do.
Stroud, Mrs. W.	Rupert Lodge, Grove Road.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Teale, Miss	North Grange, Headingley.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thornley, Miss	Mr. Illingworth, Flower Bank.
Wager, Mrs.	Bank Villa, Chapel-Allerton.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Willson, Miss Emilie Dorothy	Ballamona, Headingley.
Willson, Miss Margaret	Do.
Wood, Miss Edith	27, Cardigan Road.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

Sir Frederick J. Bramwell, F.R.S., M. Inst. C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

George Lane Fox, Bramham Park.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S.

Wm. Hartley, Durban, Port Natal.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Clements R. Markham, C.B., F.R.S., F.L.S., Sec. R.G.S., &c., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

C. C. Oxley, Minster House, Ripon.

Sir T. Wemyss Reid, 26, Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., 19, Gledhow Gardens, London.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

Prof. T. E. Thorpe, Ph.D., D.Sc., F.R.S., Somerset House, London.

Edward Harry Woods, Rosario, Argentine Republic.

JOWETT & SOWRY, Printers and Lithographers, 78, Albion Street, Leeds.

July 29/97

LEEDS

Philosophical and Literary Society.

THE 77th ANNUAL REPORT

(For 1896-7).

Se Le/

THE

SEVENTY-SEVENTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION 1896-7.

READ AT THE ANNUAL MEETING, MAY 4th, 1897.

LEEDS:
JOWETT & SOWRY, PRINTERS AND LITHOGRAPHERS, 78, ALBION STREET.
1897.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SEVENTY-SEVENTH SESSION.

Twelve General Meetings have been held during the past Session. The Session was opened by the Earl of Crewe, who delivered an address on "Parliamentary Eloquence in England." Warm acknowledgments are due to his Lordship for this fresh mark of his interest in the work of the Society. The Society has also to thank the President (Mr. Edmund Wilson), Mr. P. F. Kendall, Principal Bodington, and Mr. J. R. Mozley for interesting lectures delivered gratuitously.

The list of Lectures is as follows:—

1.—"Parliamentary Eloquence in England." By the RIGHT HON. THE EARL OF CREWE. *Oct. 20th, 1896.*

2.—"The Rise of the Dutch Republic." By FREDERIC HARRISON, M.A. *Nov. 3rd, 1896.*

3.—"Les Mémoires du Baron de Marbot." By B. MINSSEN, M.A. *Nov. 17th, 1896.*

4.—"Death and the Under-world, as illustrated in Greek Art." By LADY EVANS. *Dec. 1st, 1896.*

5.—"The Ice Age in Yorkshire." By PERCY F. KENDALL, F.G.S. *Dec. 15th, 1896.*

6.—"Melody." By W. H. HADOW, M.A.,Mus. Bac. *Jan. 5th, 1897.*

7.—"Japan." By Rev. CANON TRISTRAM, D.D., LL.D., F.R.S. *Jan. 19th, 1897.*

8.—"The Story of Lanuvium, with reference to the Savile Collection of Antiquities." By Principal BODINGTON, Litt.D. *Feb. 2nd, 1897.*

9.—"Personal Impressions of Robert Louis Stevenson." By EDMUND GOSSE, M.A. *Feb. 16th, 1897.*

10.—"Jersey." By EDMUND WILSON (President). *March 16th, 1897.*

11.—"The Nature and Properties of X Rays." By Prof. OLIVER J. LODGE, D.Sc., F.R.S. *March 23rd, 1897.*

12.—"The Loss of Calais as one of the turning points of History." By JOHN RICKARDS MOZLEY, M.A. *April 6th, 1897.*

The number of Members and Subscribers is as follows:—

	1896.	1897.
Original Proprietary Members (78 Shares)...	60	57
New Proprietary Members (121 Shares) ...	82	81
Ordinary Members	2	2
New Ordinary Members	66	65
Annual Subscribers of £1 1s.	120	112
Annual Subscribers of 7s. 6d.	111	101
	441	418

24,614 persons have paid for entrance to the Museum.

The past Session of the Society has been marked by an event which the Council record with the utmost gratification. By the munificence of the late Lord Savile, the collections of the Society have been enriched by an addition which, both in interest and value, surpasses any donation made to the Society in recent times. This gift, which will be known as The Savile Collection, consists of a large number of objects accumulated by Lord Savile during excavations at Civita Lavinia, the ancient Lanuvium. The history and significance of these relics were explained in an interesting lecture delivered to the Society by Principal Bodington, who had visited the site of their discovery.

The Council desire to acknowledge the great skill and judgment with which the objects have been mounted and arranged by the Curator, Mr. H. Crowther, who acted under the

direction of a special Committee, consisting of the President, the Rev. C. Hargrove, Dr. Bodington, Mr. Thos. Marshall, and Dr. Eddison. The importance and extent of the collection decided the Council to make a special arrangement for its display, and for this purpose the room hitherto used as an Industrial Museum was selected. This room was cleared of its contents, and now contains the whole of the Savile Collection, together with such other valuable objects possessed by the Society as are appropriate to a Museum of Greek and Roman Archæology.

The most striking objects presented by Lord Savile are the heads and shoulders of four horses, three being originals in marble, and the fourth a plaster cast of an original now in the British Museum. The horses are free in their execution and spirited in expression and movement. Along with these are the marble torsos of warriors or outriders clothed with chlamys, lorica and tunic, girt round the waist with fringed girdles, and carrying short swords. There are also many fragments of various portions of the limbs of the horses, saddle cloths, and sandaled feet of the warriors. Lord Savile suggested that an equestrian group, of which these are parts, occupied a quadrangle exposed in excavating, of which, as also of other associated discoveries, photographs are hung near the Savile Collection.

A small table of veined marble, probably of Republican times, bears the following dedication :—Q. LABE. Q. F. JOVI BEONO (Quintus Laberius, the son of Quintus to Jupiter the good). Other marble objects are busts of Bacchus, Silenus, various heads, torsos, altars, pilasters, and a roof-tile with an eagle in relief.

The numerous objects in terra-cotta, of an archaic Greek character, include a painted female head, in an excellent state of preservation, which was the finial ornament of a water-pipe from the top of a temple; slabs of polychrome terra-cotta, with an ornate frieze from the exterior of a temple, votive offerings and a large series of lamps.

The pottery, which occupies a central case in the room, consists of fragments, more or less perfect, of Athenian vases, dishes, jars, unguents, Arretine and Italo-Greek painted ware of about 500—400 B.C. In other cases are displayed bronze keys, surgical instruments, nails, lamp, fibulæ, &c.; hairpins, styli, needles and spoons in ivory, and various objects in lead, iron and glass.

The collection of silver and copper coins, over two hundred in number, is chiefly Republican and Roman Imperial, extending from 350 B.C. to the end of the 4th Century A.D.

The desire of the Society to make Lord Savile one of its Honorary Members was unhappily frustrated by the death of his Lordship, which occurred on November 28th, 1896, almost immediately after the reception of his generous gift. He bequeathed to the Society a bust of himself executed in marble by Van der Kerkhove Saibas, at Brussels. This bust, which was gratefully received by the Council from the present Lord Savile, finds a fitting place in the Savile Room.

It has been thought advisable to display in the same room as the Savile Collection the fine series of Ancient Marbles, which was presented in 1863-4 to the Museum by the Rev. John Gott, D.D., now the Lord Bishop of Truro, and which was collected by Mr. Benj. Gott and Mr. Rawson during a tour in Greece, in 1815. The Greek stelæ and the marble doors, of the Hellenistic Period, have been placed in glass cases, and the altars and larger marbles on stands on the floor.

On the north wall of the same room the large mosaic from a Roman bath at Aldborough—the Isurium of the Romans—has been fixed in a good light, and near, on a stand, the Roman altars from Castleford and Chapeltown, Leeds.

Other gifts to the Museum have been unusually numerous and valuable. Mr. F. Atkinson, of Murraysburg, a son of one of the Hon. Curators of the Museum, has presented a clavicle

of one of the extinct Anomodont Reptiles, of the Trias, of South Africa; nests of the Penduline Tit and other natural history objects. Mr. H. Bendelack Hewetson, F.L.S., a wing of the Standard-winged Goatsucker, with the seasonal elongation of the ninth primary, from Mashonaland, fossil oysters and sea-urchins from the Oolite of El Kantara, Algeria, and recent shells from the Sahara.

A very acceptable collection of microscopical and other entomological objects has been presented by Mr. Fred Enock, F.E.S., of London, which includes the Hessian fly in various stages, several related forms and parasites; Stylops and the two sexes of the British Trap-door Spider and nests.

A series of over forty specimens of South African Butterflies, many recently new to science, from Mr. Guy A. K. Marshall, London. Eggs of a Crocodile killed at Assouan and other objects, from Mr. Aquila Dodgson, Headingley. A mummied foot of a lady from Thebes, of about 1700 B.C., by the Rev. J. Ridley, Brownhill Vicarage, Birstall. Nest of garden warbler, hedgehog, and other specimens of natural history, from Mrs. J. E. Eddison, Adel. Specimen of flexible sandstone from Prof. Miall, F.R.S. Silver coins of Æthelbert, William the Lion of Scotland, and the Emp. Hy. VII. of Luxemburg, from the Rev. T. Thistlethwaite Smith, M.A., Leeds.

Mr. Edward Allen, of York, has kindly presented two mounted specimens of the Sooty Shearwater (*Puffinus griseus*), rare British birds, which were shot at Bridlington, in December, 1895. Mr. J. W. Dixon, of Leeds, a series of microscopical slides of foraminifera.

Mr. Robert Arthington, formerly of Leeds, has given a 17th century spherical sundial, which at one time stood on a building at Farnley, belonging to one of his ancestors, Robert Arthington, who lived at Farnley Hall, and was steward for the Danby family.

Mr. Monkman, Leeds, has presented a pair of old folding doors, with lock, from a building which the donor is demolishing, for improvements, in Mill Hill, and which at one time gave entrance to a chapel, and afterwards to a post-office.

The use of the Museum by students in special subjects has been sustained; sixty-seven references have been made to the various cabinet collections. Specimens have been lent to the Biological, Chemical, Dyeing and other departments of the Yorkshire College; undergraduates of the Victoria University have taken advantage of the general collections, facilities having been given to handle specimens, and ten visits have been made by classes of Board School children under the charge of teachers.

The Council have pleasure in again acknowledging many valuable donations to the Library from the Trustees of the British Museum, the Smithsonian Institute and other learned Societies. Mr. Stephen A. Marshall, B.A., of Ambleside, has presented a copy of the rainfall, at the Philosophical Hall, from July, 1823, to June, 1834, which is printed in full elsewhere in the Report of the Society.

The weekly records of meteorological observations furnished to the newspapers have been made still more valuable by the addition of the mean weekly temperature of the ground at a depth of two feet six inches, as registered by a Symons' Earth Thermometer by Mr. Richard Reynolds, F.C.S., in his garden at Cliff Road, Headingley. The daily readings being duly entered in the Meteorological Charts.

The Council have to record, with regret, the death of Mr. George Lane Fox, an Honorary Member of the Society, and a liberal donor of archæological objects to the Society's collections.

The Leeds Committee, appointed under the auspices of the Society for the promotion of a memorial to the late Prof. Huxley, succeeded in its objects, and was able to forward a substantial contribution to the Central Committee.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1896.

1896.	Mean Temperature.	Mean Height of Barometer (inches).	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	41·9	30·039	·46	·53
February...	41·2	30·039	·82	·82
March	43·7	29·491	2·82	3·04
April	48·2	29·940	1·21	1·25
May...	54·2	30·032	·50	·47
June...	61·3	29·691	3·56	4·51
July	62·7	29·782	1·42	1·61
August	57·4	29·789	1·92	2·07
September	54·7	29·486	3·19	3·49
October	44·6	29·471	3·97	3·83
November	41·6	29·922	1·52	1·76
December	39·9	29·458	3·39	3·25

Mean monthly temperature—49·28°.

Mean monthly height of the barometer—29·761 inches.

Total rainfall for the year—Museum 24·78 inches; Woodhouse Cliff 26·63 inches. Average rainfall at the Museum for the ten years 1887—1896, 24·31 inches.

Greatest degree of heat, indicated by the thermometer in the shade— 85° on June 13th; minimum— 26° on February 26th and November 6th.

Greatest barometric pressure—30·88 inches on January 9th, the temperature of the mercury being 48°; least pressure—28·40 inches on March 3rd, the temperature of the mercury being 47°.

Greatest fall of rain (during 24 hours)— ·96 inches on June 4th.

The Bench Mark at the corner of the Philosophical Hall is 131·8′ above the Ordnance datum, and ·8′ above the pavement. The cistern of the barometer is 12·8′, the thermometers are 42′, and the rain-gauge is 45′ above the bench mark.

The Hall is situated at 1° 32′ 45″ or 6 min. 11 sec. W., and 53° 47′ 51″ N., and hence $g/g_{45°}$ is 1·000774. Taking the standard height of the barometer to be 30″, and the standard temperature to be 62° F, the height of the homogeneous atmosphere is 27860′. To find the height of a barometer at sea level equivalent to a reading of H″, at temperature of t° F. different from 62° F., add to the reading H″ (·0054 ∓ ·00001t).

SUNSHINE AT LEEDS IN 1896.

The observations were made by Jordan's Photographic Sunshine Recorder at the following stations:—

1. The Museum of the Philosophical and Literary Society, situate in the centre of the city; elevation above the sea, 145 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the city; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the city; elevation, 475 feet; on the fringe of the borough.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible duration.
JANUARY	1	21·35	8·33
	2	34·30	13·31
	3	37·40	14·54
FEBRUARY	1	20·0	7·19
	2	27·10	9·77
	3	22·10	7·97
MARCH	1	106·25	29·0
	2	120·0	32·71
	3	104·55	28·60
APRIL	1	123·0	29·65
	2	148·40	35·83
	3	180·10	43·43
MAY	1	183·05	37·98
	2	210·05	43·61
	3	213·0	44·18
JUNE	1	175·30	35·48
	2	198·15	48·08
	3	206·0	41·65
JULY	1	161·05	32·42
	2	174·30	35·12
	3	183·55	37·02
AUGUST..	1	81·0	18·04
	3	100·20	22·35
	3	112·30	25·06
SEPTEMBER	1	57·20	13·62
	2	68·20	17·69
	3	81·05	21·51
OCTOBER	1	51·0	15·51
	2	73·0	22·21
	3	80.30	24·49
NOVEMBER	1	23·30	8 88
	2	46·20	17·52
	3	65·10	24·65
DECEMBER	1	3·30	1·44
	2	17·10	7·07
	3	37·0	15·24

SUMMARY FOR THE YEAR

	Hours recorded. Hours.	Mins.	Difference from mean of 9 years in hours.	Per cent. of possible duration.
Museum ..	1,007	0	+ 53·15	22·60
Woodhouse Cliff	1,218	20	+ 43·12	27·31
Lawnswood ..	1,324	05	+ 49·31	29·72

26·5 per cent. mean for 1896.		22·2 per cent. mean for 1891.	
37·5 ,, ,, 1895.		24·4 ,, ,, 1890.	
29.0 ,, ,, 1894.		20·7 ,, ,, 1889.	
31·6 ,, ,, 1893.		25·9 ,, ,, nine years.	
27.5 ,, ,, 1892.			

The Meteorological Office publishes the following records of sunshine for 1896, as observed at stations taken as representing specified districts:—

		Hours recorded.	Difference from mean.	Percentage of possible duration.
Scotland,	N. (Stornoway, &c.)	988	− 64	22
,,	E. (Aberdeen, Marchmont)	1,240	− 35	28
,,	W. (Glasgow; Douglas, Isle of Man) ..	1,338	− 4	30
England,	N.E. (Durham, York)	1,239	− 37	28
,,	N.W. (Stonyhurst, Blackpool, Llandudno)	1,247	+ 5	30
,,	Mid. (Cirencester, Oxford, &c.)	1,335	− 22	31
,,	S. (London, Hastings, Southampton, &c.)	1,593	− 7	36
,,	E. (Hillingdon, Geldestone, Cambridge)	1,488	− 47	34
,,	S.W. (Pembroke, Falmouth, Plymouth, &c.)	1,743	+ 94	39
Ireland,	N. (Armagh, Markree Castle)	1,238	− 29	28
,,	S. (Dublin, Parsonstown, Valencia) ..	1,439	− 4	33
Channel Islands (Jersey)..	.. ..	1,915	+ 15	43

SUMMARY.

31.8 per cent. mean for United Kingdom, 1896.	32·5 per cent. mean for United Kingdom, 1891.
35·8 ,, ,, ,, 1895.	30·7 ,, ,, ,, 1890.
31·1 ,, ,, ,, 1894.	29·2 ,, ,, ,, 1889.
37·0 ,, ,, ,, 1893.	27·5 ,, ,, ,, 1888.
35·2 ,, ,, ,, 1892.	35·6 ,, ,, ,, 1887.

or 32·65 per cent. mean for ten years.

RAINFALL AT THE PHILOSOPHICAL HALL, LEEDS,

From July, 1823, to June, 1834.

Copied by Mr. Stephen A. Marshall, B.A., from notes, in the writing of Mr. Henry Cowper Marshall, in a book containing detailed Meteorological Observations at Headingley House, Leeds, together with the monthly totals of rain at various other places in the years 1818 to 1839.

YEAR.	1823.	1824.	1825.	1826.	1827.	1828.	1829.	1830.	1831.	1832.	1833.	1834.
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
January	—	1·00	1·20	·46	1·48	2·58	·28	·10	2·32	·84	·66	3·81
February	—	·61	·24	2·61	·63	·64	·12	·23	2·49	·18	2·80	1·42
March	—	2·26	1·10	·55	2·38	1·52	·10	·11	2·04	1·40	1·17	1·37
April	—	·79	1·39	1·59	·97	1·19	·18	1·26	1·42	3·05	2·21	1·00
May	—	·56	2·61	·53	1·66	1·69	·10	3·71	1·96	1·24	1·34	1·50
June	—	2·08	1·20	·39	*1·74	2·96	2·10	3·59	2·30	3·93	3·52	1·80
July	3·88	·71	·54	1·59	1·31	5·76	5·17	3·59	3·48	2·14	1·24	—
August	4·24	1·68	2·51	1·64	2·83	2·87	6·66	1·95	3·70	4·33	3·36	—
September	2·19	3·72	1·70	3·75	1·66	2·20	2·20	4·52	1·26	·54	1·83	—
October	2·44	6·21	2·39	1·77	4·31	1·10	1·29	·30	4·50	2·50	1·59	—
November	1·66	2·99	2·90	1·14	1·46	1·32	1·43	2·71	3·96	2·58	1·74	—
December	3·96	4·11	2·86	1·25	3·00	2·07	·03	1·64	2·10	2·60	3·46	—
YEARLY TOTAL ...	—	26·72	20·64	17·27	23·43	25·90	19·66	23·71	31·53	25·33	24·92	—

* 1827 is entered twice over, in parallel Columns, differing in the amount for June, which is stated as 1·74 and as 0·84, with a X calling attention to the difference. From comparison with the fall at Headingley House that month, I conclude 1·74 is correct.—S.A.M.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the year 1896-7.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in Bank, May 1st, 1896		—		55	18	8
,, Annual Subscriptions, viz.:—						
74 New Proprietary Members, at 21s. ...	77	14	0			
2 Original Ordinary ,, 42s. ...	4	4	0			
60 New Ordinary ,, 21s. ...	63	0	0			
114 Annual Subscribers, at 21s.	119	14	0			
101 Annual Subscribers, at 7s. 6d. ...	37	17	6			
,, Arrears	8	3	6			
				310	13	0
,, Rent, viz.:—						
Cellars	40	0	0			
Lecture Room	204	15	6			
				244	15	6
,, Receipts from Visitors to Museum ...				102	11	2
,, Sale of Guides	1	11	3			
,, Bank Interest	0	17	0			
,, Sundries	5	19	6			
				8	7	9
,, Balance due to Bank				0	12	2
				£722	18	3

PAYMENTS.	£	s.	d.	£	s.	d.
By Repairs and Alterations	77	12	8			
,, Rates and Taxes	24	2	6			
,, Fire Insurance	12	10	0			
,, Coals, &c.	20	10	6			
,, Gas	21	12	8			
,, Cleaning	7	9	7			
				163	17	11
,, Salaries and Wages	304	9	0			
,, Fee to Auditor	2	2	0			
				306	11	0
,, Collections, Library, and Scientific Apparatus	31	13	2			
,, Savile Collection	75	13	8			
				107	6	10
,, Postages	9	3	3			
,, Advertising and Printing	23	15	3			
,, Lectures	89	15	6			
,, Sundries	17	9	9			
				140	3	9
,, Electric Light Supply	...		...	4	1	2
,, Balance in hand	...		...	0	17	7
				£722	18	3

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

LEEDS, *June 1st, 1897.*

BEEVERS & ADGIE,
CHARTERED ACCOUNTANTS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1896-7.

ZOOLOGY.

Specimens in spirit of Scorpion (*Opisthophthalmus glabrifrons*); Grasshopper (*Ephippigera*), Mantis, Spiders (2) and Lizards (*Agama*). Nests (2) of Penduline Tit (*Ægithalus capensis*) ..... Eggs of Tortoise from S.W. Africa ... Specimens of Locusts	Mr. F. Atkinson, Murraysburg, Cape Colony.
Wing of Standard-winged Goatsucker (*Cosmetornis vexillarius*), from Mashonaland ..... Specimens of Shells of *Helix desertorum*, *H. candidissima*, *Bulimus decollatus*, &c., from Biskra, Sahara..	Mr. H. Bendelack Hewetson, F.L.S., Leeds.
Collection of over Forty named specimens of South African Butterflies...	Mr. Guy A. K. Marshall, Connaught Sq., London.
Specimens of Mussel Scale and Mealy Bug	Mr. Thos. Garnett, St. John's, Wakefield.
Nest of a Garden Warbler (*Sylvia hortensis*) and egg, and specimens of Hedgehog and Robin	Mrs. John E. Eddison, Adel.
Eggs of Crocodile, in spirit, from an animal 12 ft. long, killed at Assouan, Dec. 28th, 1891 ..... Common Snake (*Tropidonotus natrix*), in spirit.....	Mr. Aquila Dodgson, Southleigh, Headingley.

Nests of British Trap-door Spider (*Atypus piceus*), and specimens in spirits of male and female animals.. Microscopical specimens of *Stylops Spencei*; Hessian fly (*Cecidomya destructor*, m. and f.); Parasites of Hessian fly (*Merisus destructor*), America; *M. intermedius*, Russia; *M. subaptera*; *Entedon epigonus*, England and Russia ..... Straw infested with Hessian fly ..... Stylopized Bee (*Andrena atriceps*) ...	Mr. Fred Enock, F.L.S., Holloway, London, N.
Two specimens of Sooty Shearwater (*Puffinus griseus*), shot at Bridlington, Dec., 1895.....	Mr. Edward Allen, Feasegate, York.
Specimen of an Adder (*Vipera berus*), from Skipwith Common, near Selby	Mr. Councillor C. H. Wilson, Leeds.
A series of Microscopical Slides of Foraminifera	Mr. J. W. Dixon, Leeds.

PALÆONTOLOGY.

Clavicle of an Anomodont Reptile from the Karroo Rocks, Triassic Formation, Murraysburg, S. Africa.	Mr. F. Atkinson, Murraysburg, S. Africa.
Specimens of *Calamites* and *Dadoxylon*, from Grit Rock, Edge Quarry, Thornhill	Mr. Walter Wood, Thornhill.
Specimen of *Scaphites* from the Chalk, Bessingley Hill, Bridlington	Mr. J. Courtney, Oxford Street, Bridlington.
Specimens of *Ostrea* and Echinoderms, from the Oolite, El Kantara, Algeria	Mr. H. Bendelack Hewetson, F.Z.S., Leeds.

MINERALOGY.

Specimen of Flexible Sandstone	Prof. Miall, F.R.S., Yorkshire College.
Specimen of Gold-ore from Coolgardie, Australia	Mr. John C. Nicholson, Moorfield House, Headingley.

ARCHÆOLOGY & ETHNOLOGY.

Bust of the late Rt. Hon. Lord Savile, P.C., G.C.B., in marble, by Van der Kerkhove Saibas.....	The late Rt. Hon. Lord Savile, Rufford Abbey.
Large collection of objects excavated by the donor at Civita Lavinia (ancient Lanuvium), which includes heads of horses, torsos of outriders, roof-tile, busts, masks, sandaled feet, altars and pilasters in marble. Antifixal roof-tile, representing the mask of a woman in relief, and slabs of a painted cornice from an Archaic Greek Temple, unguents, vases, jars, saucers, a large series of lamps, and fragments of Arretine, painted Italo-Greek ware and other objects in terra-cotta. Carved knife-handles, pieces of flutes, styli, hairpins, needles and spoons in ivory. Large cylindrical vessel and bucket, oil flask, lamp, surgical instruments, keys, fibulæ, needles, &c., in bronze. Inscribed ladle, palette and knobs in lead. Unguents and other objects in glass, and a series of silver and copper coins dating from 350 B.C. to 4th Century A.D.	The late Rt. Hon. Lord Savile, P.C., G.C.B., Rufford Abbey, Ollerton, Notts.
Mummied foot of a lady from Thebes, belonging to a later period than the 18th dynasty, about 1700 B.C., but not later than 21st dynasty	The Rev. J. Ridley, M.A., Brownhill Vicarage, Birstall.
Seventeenth Century spherical Sundial from Farnley, Leeds	Mr. Robert Arthington, Leeds.
Three Silver Coins — Æthelbert, William the Lion of Scotland, and Henry VII., Count of Luxemburg ..	The Rev. T. Thistlethwaite Smith, M.A., Virginia Road, Leeds.
Pair of Old Doors and lock, from a building now being demolished in Mill Hill, Leeds, formerly a chapel, later a post-office	Mr. George Monkman, Builder, Gt. George St., Leeds.
Specimen-box Shoot	Mr. Fred Reynolds, Briggate, Leeds.

PUBLICATIONS.

Catalogue of Fossil Bryozoa	The Trustees of the British Museum.
Catalogue of Jurassic Bryozoa	
Catalogue of Madreporia, Vol. II. ...	
Catalogue of Snakes, Vol. III.	
Catalogue of Birds, Vol. XXIV.	
Copy of the Rainfall which fell at the Philosophical Hall, Leeds, from July, 1823, to June, 1834	Mr. Stephen A. Marshall, B.A., Ambleside.
Report of the Proceedings of the Conference on Inland Navigation, Birmingham, 1895	The Federated Institution of Mining Engineers, Newcastle-on-Tyne.
On portions of a Cranium and a Jaw in a slab containing fossil remains of the Archæopteryx, by Sir John Evans (pamphlet)	Lady Evans.
General Index to the Monthly Notices of the Royal Astronomical Society, 1869-92, Vols. XXX.—LII.	The Royal Astronomical Society.
S.S. Tantallon Castle	Castle Mail Packets Co., Edinburgh.
Report of Leeds Records	The Town Clerk, Leeds.
Process Year Book, 1896	Mr. Joseph Scholefield, London.
General Index to the First fifty Vols. of the Quarterly Journal of the Geological Society	The Geological Society of London.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-WEEKLY.

Bollettino delle Publicationi Italiane	The Compiler.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	Purchased.

Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.
Journal of the Linnean Society	Mr. Edward Atkinson, F.L.S.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions.....	Purchased.
Proceedings of the Royal Society ...	The Society.
Proceedings of the Royal Institution of Great Britain	The Institution.
Publications of the Ray Society	Purchased.
Abridgments of Specifications for Patents, Period 1884—88	The Comptroller Genera of Patents.
British Association Report.....	The Association.
Greenwich Observations, 1893	The Astronomer-Royal.
Memoirs of the Royal Astronomical Society	The Society.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall, 1895	Purchased.
Monograph of the Palæontographical Society	Purchased.

Proceedings of the Yorkshire Geological and Polytechnic Society.....	The Society.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Liverpool Geological Society.....	The Society.
Journal of the Liverpool Geological Association	The Association.
Transactions of the Manchester Geological Society	The Society.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne.....	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society	The Society.
Report of the Committee of Leicester Town Museum	The Museum.
Report of the Royal Institution, Hull	The Institution.
Report of the Meteorological Department of the Borough of Southport.	The Meteorological Observer.
Annual Report of the Brighton Town Museum	The Museum.
Annual Report, Middlesex Hospital...	The Hospital.
Annual Report of the Birkenhead Literary and Scientific Society	The Society.
Proceedings of the Liverpool Literary and Philosophical Society	The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association	The Association.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society	The Society.
Annual Report of the Sheffield Literary and Philosophical Society	The Society.

Annual Report of the Chester Society of Natural Science and Literature	The Society.
Transactions of the Leeds Naturalists' Club and Scientific Association.....	The Association.
Journal of the Royal Institution of Cornwall	The Institution.
Annual Report of the Royal Cornwall Polytechnic Society.....	The Society.
Report of Associated Architectural Societies	The Association.
Journal of the Chester Archæological and Historic Society	The Society.
Geological Record	Purchased.
Transactions of the Yorkshire Naturalists' Union	The Union.
Proceedings of the Royal Society of Edinburgh	The Society.
Transactions do. do.	
Transactions of the Edinburgh Geological Society.....	The Society.
Proceedings of the Glasgow Philosophical Society	The Society.
Proceedings of the Berwickshire Naturalists' Club	The Club.
Scientific Proceedings of the Royal Dublin Society.....	The Society.
Scientific Transactions do.	
Transactions of the Royal Irish Academy	The Academy.
Proceedings do. do.	
Journal of the Royal Geological Society of Ireland	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	The Club.
Publications of the Royal Swedish Academy of Sciences.....	The Academy.
Papers of the Royal University of Norway	The University.

Bulletin of the Geological Institution of the University of Upsala	The Institution.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger.....	Royal Danish Society of Sciences.
Bulletin, Société Impériale, Moscow...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deütschen Akademie der Naturforscher	The Academy.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien ...	The Society.
Memoirs of the National Academy of Sciences	The Academy.
Report of Australasian Association for the Advancement of Science.....	The Association
Journal and Proceedings of the Royal Society of New South Wales	The Society.
Journal of the Royal Geographical Society of Australasia	The Society.
Wealth and Progress of New South Wales	The Agent-General.
Records of the Geological Survey of N.S.W. .... Memoirs of the Geological Survey of N.S.W.	The Surveyor.
Annual Report and Papers of the Department of Mines and Agriculture, N.S.W.....	The Department.
Prodromus of the Zoology of Victoria	The Editor.
Records of the Australian Museum Report of the Trustees of the Australian Museum.....	The Trustees.
Proceedings of the Royal Society of Queensland	The Society.
Transactions and Proceedings of the New Zealand Institute	The Institute.
ap ers and Proceedings of the Royal Society of Tasmania	The Society.

Proceedings and Transactions of the Royal Society of Canada, 2nd Ser., Vol. I.	The Society.
Proceedings of the Canadian Institute Annual Report do. Transactions do.	The Institute.
Proceedings and Transactions of the Nova Scotian Institute of Natural Science	The Institute.
Annual Report, Hamilton Public Library, Ontario, Canada	The Librarian.
Journal and Proceedings of the Hamilton Association	The Association.
Geological and Natural History Survey of Canada ..... Annual Report and Papers—do. ..... Contributions to Canadian Palæontology	Department of the Interior.
Memorias de la Sociedad Científica (Mexico)	The Society.
" Boletin Mensual " Observatorio Meteorologico-Magnetico Central de Mexico	The Editor.
Annuario del Observations Astrónomico Nacional, Mexico.....	The Astronomer.
Boletin del Observatorio Astronómico Nacional de Tacubaya	The Observer.
Report of the Museum National, Rio-de-Janeiro..... Archivos do.	Directeur-Général.
Cape Meridian Observations ..... Report of H.M. Astronomer at the Cape of Good Hope to the Secretary of Admiralty	Cape Astronomer-Royal.
Transactions of the American Philosophical Society ..... Proceedings do.	The Society.
United States Geological Survey, Annual Report..... Contributions to American Ethnology. United States Geographical and Geological Survey	The Department.

United States Department of Agriculture, Publications of ..... Weasels of North America ..... Shrews do. do. ..... Voles and Lemmings of North America	The Department.
Report of the Smithsonian Institution Smithsonian Miscellaneous Collections Smithsonian Contributions ..... Annual Reports of the Bureau of Ethnology ..... Miscellaneous Publications of the Bureau of Ethnology	The Institution.
Proceedings of United States National Museum ..... Report do. do. Bulletins do. do.	The Museum.
Transactions of the Academy of Science of St. Louis	The Academy.
Proceedings of the Academy of Natural Sciences of Philadelphia... Papers do. do.	The Academy.
Proceedings of the American Academy of Arts and Sciences.....	The Academy
Transactions of the Wisconsin Academy of Sciences, Arts, and Letters	The Academy.
Memoirs of the National Academy of Sciences, Washington.....	The Academy
Proceedings of the Davenport Academy of Natural Science.....	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia ...	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba	The Society.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science	The Union.
Proceedings of the Boston Society of Natural History, U.S.A. ..... Memoirs do.	The Society.
Bulletins of the Essex Institute, U.S.A.	The Institute.

Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College	The College.
Annual Report of Harvard College	
Harvard University Catalogue	The University.
Annual Report of the Chicago Academy of Sciences.....	The Academy.
Transactions of the Astronomical Observatory of Yale University ...	The University.
Annual Report do.	
Report of the President of Yale University	
Catalogue do. do.	
Journal of the Elisha Mitchell Scientific Society	The Society.
Tufts College Studies.....	The College.
Transactions of the Meriden Scientific Association	The Association

LIST OF OFFICERS AND COUNCIL,

1897-8.

OFFICERS.

PRESIDENT	EDMUND WILSON.
VICE-PRESIDENTS. .	REV. CHAS. HARGROVE, M.A. NATHAN BODINGTON, Litt.D.
HONORARY SECRETARIES .	ARTHUR SMITHELLS, B.Sc. E. K. CLARK, M.A., M.Inst.C.E.
TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	J. A. NUNNELEY, M.B.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. LOUIS C. MIALL, F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. J. H. D. MATTHEWS, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	THOMAS SCATTERGOOD.
JAMES E. BEDFORD, F.G.S.	T. P. TEALE, M.A., F.R.S.
T. WALTER HARDING.	J. H. WICKSTEED, M.Inst.C.E.
THOMAS MARSHALL, M.A.	J. J. WILLSON.
RICHARD REYNOLDS, F.I.C.	RICHARD WILSON.

Secretary . . .	W. F. HUSBAND, LL.B.
Curator . . .	HENRY CROWTHER, F.R.M.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1897-8.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	*Aldam, Wm.	
3	Armitage, Robert	Farnley.
4	Arthington, Robert	Headingley.
49	Baines, Mrs. Arthur	The Heath, Adel.
5	*Baines, Herbert S.	
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, Sir John, Bart.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	Broomfield Crescent, Headingley.
11	*Brown, James	
31, 62	Brown, Wm. J. (2 shares)	
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	6, Queensborough Terrace, Hyde Park, London, W.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	Greek Street.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
26	*Ellershaw, John	
28	Empson, Christopher	Mill Mount, York.
29, 48	Ford, J. R. (2 shares)	Quarrydene, Weetwood.

33	*Goodman, Benjamin .	
36-8	Gott, Wm. Henry (3 shares)	
61	Greenhow, Wm. T. .	NewtonCottage,Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
27	Hall, William .	Hillside, Headingley.
39	*Harding, T. R. .	
64	Harding, Thomas Walter .	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Regent Villas, Cumberland Rd.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	102, Lexham Gardens, Kensington, S.W.
30	Horsfall, J., M.A., F.R.C.S.	Cambray, Richmond Hill, Bournemouth, E.
47	Ingham, Constantine .	3, Belgrave Crescent, Scarbro'.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	TheLimes, Kirkstall Lane, Leeds.
57	Lupton, Charles .	The Harehills, Roundhay.
32	Lupton, Edward Basil .	Moorlands, Headingley.
53	Lupton, Francis M., M.A.	Rockland, Newton Park.
56	Lupton, Sydney, M.A. .	A. Audley Mansions, 44, Mount Street, London, W.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	*Marshall, Arthur, F.G.S. .	
60	*Marshall, John, M.A. .	
66	Marshall, Reginald Dykes	Castlerigg Manor, Keswick.
67	Marshall, V. A. E., B.A. .	Monk Coniston, Ambleside.
50	Mason, Charles Letch .	Moorland Terrace.
65	Miall, Prof. Louis C., F.R.S.	Crag Foot, Ben Rhydding.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	

10	Streatfeild, Richard James.	The Rocks, Uckfield, Sussex.
71	Tatham, Miss .	Springfield Mount.
52	Taylor, Benjamin .	20, Moorland Road.
72	*Teale, Thomas Greenwood	
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	
34, 35	Truro, The Bishop of (2 shares)	Trenython, Par Station, Cornwall.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
17	Walker, Reginald Thomas	1, Furnival's Inn, Holborn, London, E.C.
76	Ward, William .	12, Bank Street.
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	Denison Hall.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S..	Langholme, Franklin Road, Harrogate.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	*Baines, Frederick .	
2	*Balme, E. B. Wheatley, M.A.	
62	Barley, D. H., M.D. .	Grove House, Burmantofts.
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford .	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	2, East Parade.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
89	Boston, Richard .	Boar Lane.
10	Bowling, John .	Newstead House, Spencer Place.
49	Braithwaite, William .	Throstle Nest, Horsforth.

5, 6	Brown, G. W. (2 shares) .	78, Belsize Park Gardens Hampstead, London
1	Burrell, Benjamin A., F.I.C.	5, Mount Preston.
86	*Carter, J. B. .	
9	*Chadwick, William .	
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
104	Crawford, John William .	Newton Lane.
26	Dawson, Oswald .	Albion Walk Chambers, Leeds.
19	Fairbairn, Sir Andrew .	Askham Grange, near York.
118	Flitch, John R. .	Moortown.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gibson, Rev. E. C. S., D.D.	Leeds Vicarage.
102-3, 106-10, 114-15	Gott, William Henry (P) (9 shares) .	
22	Hargrave, Charles .	
23	*Hargrave, James .	
7	Hargrove, Rev. C., M.A. .	10, De Grey Terrace.
16	Harvey, William .	The Grove, Roundhay.
81	Hatch, S. C. .	
44	Hepper, Mrs. J. H. .	Quebec House, Harrogate.
51	Hoggard, Alfred .	25, Cavendish Road.
98	Howgate, William .	21, Blenheim Terrace.
36	*Hudson, Henry .	
84	Hummel, Prof. J. J. .	152, Woodsley Road.
120	Ingham, Samuel .	Headingley Hall.
56	James, Christopher William	South View, Potternewton Lane.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Harehills, Leeds.
40	Joy, William Lomas .	Brentwood, Beverley.
43	*Kitson, James .	
46	Kitson, J. Hawthorn .	Elmete Hall, Roundhay.
47	Kitson, Sir Jas., Bart., M.P.	Gledhow Hall.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.

90	Lawson, Frederick W.	Woodfield, Wood Lane.
50	Leather, Ernest Arthur	Woodland View, Boston Spa, R.S.O.
53	Lupton, Mrs. Arthur	Headingley.
95	Lupton, Arthur G.	Wellington Street.
8	Lupton, Henry	Lyndhurst, Headingley.
99	Lupton, Hugh	Mount Pleasant, Leeds.
54	*Lupton, Joseph	
55	Lupton, Mrs. John	Moorlands, Headingley.
21	Lupton, Oliver	Shireoak Road, Headingley.
63, 100	Lupton, Fras. Martineau, M.A. (P) (2 shares)	Rockland, Newton Park.
88	*McGuire, Thomas	
94	Malcolm, John Cooper	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R.	Regent Villas, Cumberland Road.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D.	Grammar School, Leeds.
27	Maude, William Henry	Middleton Lodge, Leeds.
117	Middleton, Arthur	Calverley Chambers, Victoria Sq.
33	Muir, James	Rutland Lodge, Buxton.
66	Nicholson, A. H.	
30	Nicholson, Marshall	Middleton Hall, near Leeds.
64	*Nickols, Richard	
67	Nunneley, A. G.	Wanstead House, Burley, Leeds.
68	Oxley, James Walker	28, Commercial Street.
93	Palmer, Henry John	55, Albion Street.
28	*Passavant, P. W.	
82	Pearson, John Thomas	The Hall, Melmerby, S.O.
11	Price, Mrs. William N.	Hillary Place.
38	*Ralph, John, M.A.	
34	Ransome, Prof. Cyril, M.A.	
69	Reynolds, Richard, F.I.C.	Cliff Lodge, Hyde Park.
72	Rider, James	8, Beech Grove Terrace.
18	Robson, A.W. M., F.R.C.S.	Moor Road, Headingley.
105	Ryder, Charles	Gledhow Hill.

112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
119	Schunck, John Edward	Gledhow Wood, Gledhow.
57	Stringer, John William	Inglebank, Far Headingley.
73	Teale, T. P., M.A., F.R.S.	North Grange, Headingley.
74	Teasdale, Washington	Headingley.
76	*Tennant, Thomas	
78	*Tetley, F. W.	
58	Thompson, Chas. F.	Rowangarth, Ben Rhydding.
79	*Turner, Richard B.	
80	Wailes, William	2, Albion Place.
71	Ward, John	Moor-Allerton House.
111	*Watson, William Henry	
41	Webb, Joseph S.	26, Park Row.
97	Weston, Edward	Newton Park Villa, New Leeds.
42	Whiting, John	Cliff Road.
83	Wicksteed, J. H., M. Inst. C.E.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M.	220, Newton Hill.
85	*Wilson, John	
17	Wilson, Richard	28, Commercial Street.
35	Wood, Philip T.	22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah	29, Meadow Lane.
13	Stratten, Rev. Canon	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert	13, St. John's Terrace.
2	Baines, Talbot, B.A.	Hanover Square.
48	Barran, Rowland H.	Beechwood, Roundhay.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E., F.G.S.	Arncliffe, Shireoak Road.

7	Best, Mrs. William W. .	31, Lyddon Terrace.
40	Bodington, Prof. N., Litt.D.	Shireoak Road, Headingley.
8	*Bolland, W. T. .	
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George .	Wood Lane, Headingley.
72	Brigg, Matthew A. .	12, Sholebroke Avenue.
11	Briggs, Riley .	Springfield Mount.
75	Brunton, George .	Hillary Mount, Woodhouse Lane.
18	Clark, E. K., M.A. .	13, Wellclose Place.
14	Corson, George .	Wood Lane, Headingley.
41	Crossley, Thomas .	Highfield House, Headingley.
33	Denison, Samuel .	32, Clarendon Road.
16	Denny, T. G. .	
32	*Dixon, A. S. .	
65	Eddison, Octavius, B.A. .	St. Helen's, Adel.
20	Eddison, Robert William .	The Manor, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William .	
69	Fraser, James B. .	8, Park Square.
24	Gascoigne, F. C. Trench .	Parlington Park, nr. Garforth.
25	Goodman, Prof. John .	The Yorkshire College.
35	Grahl, Conrad E. .	Ashwood, Headingley.
12	Hadow, Reginald T. .	
42	Hannam, S. J. W. .	44, Bank Street.
27	*Hargrave, John .	
60	Harland, J. W. .	Headingley.
28	Hepper, John .	Clareville, Headingley.
30	Hobson, Alfred .	8, Ladywood Villas, Roundhay.
80	*Holmes, Joseph .	
81	*Holroyd, James .	
31	Illingworth, William .	Flower Bank, Burley, Leeds.
6	Jackson, Richard .	Beech Villa, Cardigan Road.
34	Jackson, Rt. Hon. W. L., M.P. .	Allerton Hall, Leeds.
67	Jefferson, Robert P. .	26, Spencer Place.

63	*Jowitt, Miss E. M. .	
38	*Lawson, Thomas .	
39	*Lawson, John .	
88	Legard, Albert G., M.A. .	8, Kymin Terrace, Penarth.
23	Lupton, Prof. Arnold .	6, De Grey Road.
44	McCheane, Miss .	Moor Cottage, Adel.
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch (P).	Moorland Terrace.
9	Mathers, John Shackleton.	Hanover House, Leeds.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	*Morley, R. B. .	
49	*Myers, W. C. .	
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Springwell House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
51	*Nunneley, Thomas .	
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Bramley Grange, Thorner.
55	Nussey, Mrs. S. L. .	Potternewton Hall.
56	*Nussey, Peter .	
43	Powolny, E. Adolph .	Hillary Place.
59	Ramsbotham, S. H., M.D. .	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	Riley, H. W. .	131, Briggate.
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	20, Call Lane.
68	*Smith, William Farrar .	
76	Smithells, Prof. A., B.Sc. .	North Grange Road.
37	Snowdon, Miss .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., M.A.	Rupert Lodge, Grove Road.
77	Titley, Mrs. Anthony .	Manor House, Victoria Grove.
78	Titley, John A.	Newton Hill, Leeds.

79	Tottie, Mrs. J. W. (P)	.
64	Tweedale, John	. 12, South Parade.
82	Walker, H. B.	.
83	Ward, Edmund	. 19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S.	. Buckingham Ter., Headingley.
90	Ward, William (P)	. 12, Bank Street.
3	Webb, William Henry	. Aire Street.
85	Willson, J. J.	. Ballamona, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Albrecht, Horace	. Springwood Road, Roundhay.
Armistead, Edwin	. 39, Louis Street.
Asquith, John Robert	. Bond Place.
Baines, Miss	. Aysgarth, Headingley.
Bakewell, William	. 38, Park Square.
Barran, Alfred	. Cumberland Road, Headingley.
Barran, Mrs.	. Weetwood.
Bartholomew, W. H., C.E.	. Ridge Way House.
Beaumont, Prof. R.	. 14, Regent Park Avenue.
Bedford, Charles S.	. Broomleigh, Chapel Lane.
Best, Rev. J. H., B.Sc.	. Stanningley Rectory.
Birch, Prof. De Burgh, M.D.	. 16, De Grey Terrace.
Braithwaite, Richard Hale	. Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	. Wynneholme, Far Headingley.
Briscoe, John Ed.	. 199, Roundhay Road.
Brown, George	. 14, Westfield Terrace, Chapel-Allerton.
Buckley, J. C.	. Longfield, Headingley.
Bulmer, Charles	. Blenheim Lodge.
Burrows, Rev. W. O.	. Clergy School, Leeds.
Butler, Edmund	. Kirkstall Forge.
Cameron, Dr. Spottiswoode	. Ridge Mount, Cliff Road.
Chorley, R.	. Cookridge Street.

Clark, Miss	Potternewton.
Clark, Miss Alice	35, Mount Preston.
Cliff, Walter	Western Flatts, Wortley.
Cobb, J. W., B.Sc.	16, Ashville Avenue, Cardigan Road.
Cohen, Dr. J. B.	15, Regent Park Avenue.
Connal, B. M., M.A.	13, Beech Grove Terrace.
Crampton, W. T.	Parcmont, Roundhay.
Croysdale, John	Westfield, Chapel-Allerton.
Dalton, George	Regent Villas, Cumberland Rd.
Dickinson, Brow	Rosemont, Bramley.
Dodgshun, C. C.	22, Springfield Mount.
Dodgson, A.	Southleigh, Headingley.
Elliot, Douglas	28, Bond Street.
Ellison, James Edward	10, De Grey Road.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Gardner, Wilson	10, Norwood Terrace, Victoria Road, Headingley.
Gillespie, C. M., M.A.	The Yorkshire College.
Glover, Frederick, M.A.	16, De Grey Road.
Green, John H.	Horbury, near Wakefield.
Green, William	1, Tanfield Place.
Griffith, Prof. T. W., M.D.	Park Square.
Haigh, Frederick	14, Monkbridge Road, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Harper, Alfred	Eccleshill, near Bradford.
Hartley, R. N., M.B.	38, Cookridge Street.
Hassé, A.	31, Commercial Street.
Hebblethwaite, Rhodes	5, Grosvenor Road, Headingley.
Hellier, J. B., M.D.	1, De Grey Terrace.
Hewetson, H. B., F.L.S.	9, Hanover Square.
Hindle, J. E.	10 Park Row.

Hirsch, Paul	Alma House, Headingley.
Holbrook, W.	St. Ann's Villas, Monkbridge Rd.
Ingle, Herbert	Yorkshire College.
Jefferson, Miss M.	4, Woodhouse Square.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Kitson, F. J.	Oatlands, Burley, Leeds.
Knight, Miss	Far Headingley.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lean, W. Scarnell, M.A.	7, Woodsley Terrace.
Leigh, Percy	6, Portland Crescent.
Littlewood, H., F.R.C.S.	Park Square.
Mackey, W. M., F.C.S.	Victoria Chambers, South Parade.
Manley, Miss	Cromer Hall, Leeds.
Megson, Albert	Spencer Place, New Leeds.
Moynihan, B. G. A., M.B.	33, Park Square.
Mozley, J. R., M.A.	Southleigh, Headingley.
Murphy, Albert J.	Preston House, Tonbridge Street.
Naylor, J. W.	Allerton House, Chapeltown.
Newill, Frank	9, Kelso Road.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Phillips, John Henry	Hazel House, Methley.
Powell, William	4, Queen Square.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Riley, Thomas	26, Grove Terrace, Leeds.
Rinder, W. H.	St. Ann's Lane, Burley.
Robinson, Edmund	42, Park Square.
Rogers, Prof. L. J., M.A., Mus.Bac.	13, Beech Grove Terrace.
Rumboll, Sydney	Hope Villa, Woodhouse Lane.
Sanders, T. W.	5, Blenheim Square.

Saville, H.	35, Ash Grove, Headingley.
Scatcherd, Mrs. Oliver	Morley, near Leeds.
Slade, Robert	14, Springfield Mount.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Stables, Marshall	Hope Villa, Armley.
Stockdale, Mrs. T.	Spring Lea.
Stuhlmann, Mrs.	Cavendish House, Cavendish Rd.
Sykes, Arthur	Roundhay Grange.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Teale, Lionel H.	North Grange, Headingley.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Wager, Harold, F.L.S.	Bank Villa, Stainbeck Lane.
Walker, Arthur T.	The Elms, Weetwood.
Walker, H. Secker, F.R.C.S.	Park Square.
Walker, James	Newton Park.
Walker, George	Do.
Willans, J. W.	Roxburghe, Harrogate.
Williamson, H. L.	4, St. Chad's Gardens, Far Headingley.
Wilson, D'Arcy B.	Seacroft.
Wood, Robert	27, Cardigan Road.
Wood, Thomas	St. Mark's Terrace, Woodhouse Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M	Springwood Road, Roundhay.
Armistead, Mrs.	39, Louis Street, New Leeds.
Barran, Miss Ruth	Weetwood.
Barran, P. A.	Do.
Barran, J. N.	Do.
Beaumont, Mrs. R.	14, Regent Park Avenue.

Bedford, Miss	Woodhouse Cliff.
Best, Mrs.	Stanningley Rectory.
Birch, Mrs.	16, De Grey Terrace.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	Wynneholme, Far Headingley.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brunton, Mrs.	Hillary Mount.
Brunton, Miss	Do.
Bulmer, Miss	Blenheim Lodge.
Bulmer, Miss S.	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Cameron, Mrs.	Ridge Mount, Cliff Road.
Cohen, Mrs. J. B.	15, Regent Park Avenue.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Charles	Do.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. J.	Westfield, Chapel-Allerton.
Croysdale, Miss	Do. do.
Croysdale, John H.	Do. do·
Dalton, Mrs. G.	Regent Villas, Headingley.
Day, Miss	Cavendish House, Cavendish Rd.
Dodgshun, Mrs. C. C.	22, Springfield Mount.
Dodgson, Mrs.	Southleigh, Headingley.
Ellison, Miss	10, De Grey Road.
Gardner, Mrs. Wilson	10, Norwood Terrace, Victoria Road, Headingley.
Glover, Miss	16, De Grey Road.
Glover, Miss Mary	Do.
Green, Miss	1, Tanfield Place.
Green, Miss Ethel	Do.
Haigh, Miss	14 Monkbridge Road, Headingley.
Haigh, Miss Emily	Do. do.

Hallilay, Mrs.	28 Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hebblethwaite, Mrs.	5, Grosvenor Road, Headingley.
Hellier, Mrs.	1, De Grey Terrace.
Hepper, Mrs.	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hirsch, Mrs. Paul	Alma House, Headingley.
Hirsch, Miss	Do.
Holbrook, Mrs.	St. Ann's Villas, Monkbridge Rd.
Illingworth, G. N.	Flower Bank, Burley.
Jackson, Miss	Allerton Hall, Leeds.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Miss B.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, Hermann	5, Beech Grove Terrace.
Kitson, Mrs. F. J.	Oatlands, Burley, Leeds.
Lean, Miss	7, Woodsley Terrace.
Lupton, Mrs. Arnold	6, De Grey Road.
Mathers, Miss	Hanover House.
Matthews, E. D.	Grammar School, Leeds.
Myers, Miss	Cavendish House, Cavendish Rd.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Nussey, Miss	Potternewton Hall.
Nussey, Miss E.	Springville, Shaw Lane.
Nussey, Miss M.	Do. do.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss	Cavendish House, Cavendish Rd.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	Cliff Road.
Rickards, Miss	Wortley.
Rumboll, Mrs.	Hope Villa, Woodhouse Lane.
Ryder, Miss E. I.	Gledhow Hill.
Ryder, Miss Louisa	Do.

Saville, Miss S. E.	35, Ash Grove, Headingley.
Scattergood, Miss	41, Park Square.
Slade, Mrs. R.	14, Springfield Mount.
Slade, R. H.	Do.
Somers, Mrs.	48, Woodhouse Lane.
Stables, Mrs. Marshall	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Miss M. B.	Spring Lea, Springfield Mount.
Stroud, Mrs. W.	Rupert Lodge, Grove Road.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Teale, Miss	North Grange, Headingley.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thornley, Miss	c/o Mr. Illingworth, Flower Bank.
Wager, Mrs.	Bank Villa, Chapel-Allerton.
Walker, Mrs. A. T.	The Elms, Weetwood.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Williamson, Mrs. H. L.	4, St. Chad's Gardens, Far Headingley.
Willson, Miss Emilie Dorothy	Ballamona, Headingley.
Willson, Miss Margaret	Do.
Wood, Miss Edith	27, Cardigan Road.
Wood, Miss	St. Mark's Terrace, Woodhouse Lane.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

Sir Frederick J. Bramwell, F.R.S., M.Inst.C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S.

Wm. Hartley, Durban, Port Natal.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Clements R. Markham, C.B., F.R.S., F.L.S., Sec. R.G.S. 21, Eccleston Square, Pimlico London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

C. C. Oxley, Minster House, Ripon.

Sir T. Wemyss Reid, LL.D., 26, Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., 19, Gledhow Gardens, London.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

Prof. T. E. Thorpe, Ph.D., D.Sc., F.R.S., Somerset House, London.

Edward Harry Woods, Rosario, Argentine Republic.

JOWETT & SOWRY, Printers and Lithographers, 78, Albion Street, Leeds.

Oct. 24/98

LEEDS

Philosophical and Literary Society.

THE 78th ANNUAL REPORT

(For 1897-8).

Se. Lel

THE

SEVENTY-EIGHTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION 1897-8.

READ AT THE ANNUAL MEETING, MAY 3rd, 1898.

LEEDS:
JOWETT & SOWRY, PRINTERS AND LITHOGRAPHERS, ALBION STREET.
1898.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SEVENTY-EIGHTH SESSION.

The Society has held twelve General Meetings during the past Session, and the attendance of Members and Subscribers has been somewhat above the average. The Society is indebted to Mr. C. T. Whitmell, Professor A. J. Grant, and Mr. E. K. Clark for interesting lectures delivered gratuitously.

The list of Lectures is as follows:—

1.—"Some Aspects of Mediæval London." By Sir WALTER BESANT. *Oct. 19th, 1897.*

2.—"Macaulay." By HERBERT W. PAUL. *Nov. 2nd, 1897.*

3.—"Travel in West Africa." By Miss MARY KINGSLEY. *Nov. 16th, 1897.*

4.—"The Tower of Babel and the Confusion of Tongues." By THEOPHILUS G. PINCHES, M.R.A.S. *Dec. 7th, 1897.*

5.—"Crystals and Precious Stones." By H. A. MIERS, F.R.S. *Dec. 21st, 1897.*

6.—"Modern Composers of Classical Song" (with Vocal Illustrations by Miss PAULINE CRAMER). By CARL ARMBRUSTER. *Jan. 4th, 1898.*

7.—"Chautauqua, the Summer Lecture-City of the United States." By OWEN SEAMAN, M.A. *Jan. 18th, 1898.*

8.—"The First Crossing of Spitsbergen." By Sir W. MARTIN CONWAY. *Feb. 1st, 1898.*

9.—"Some Curiosities of Vision." By SHELFORD BIDWELL, M.A., LL.B., F.R.S. *Feb. 15th, 1898.*

10.—"The Grand Cañon of the Colorado of the West." By C. T. WHITMELL, M.A., B.Sc. *March 1st, 1898.*

11.—"Cardinal Richelieu." By ARTHUR J. GRANT, M.A. *March 15th, 1898.*

12.—"Gibraltar." By E. K. CLARK, M.A. *April 5th, 1898.*

The number of Members and Subscribers shows a gratifying increase, and is as follows:—

	1897.	1898.
Original Proprietary Members	57	58
New Proprietary Members	81	82
Ordinary Members	2	2
New Ordinary Members	65	61
Annual Subscribers of £1 1s.	112	124
Annual Subscribers of 7s. 6d.	101	114
	418	441

During the Chrismas holidays the Curator gave three Museum Lectures, illustrated with the lantern, on "Cats," "Attack and Defence amongst Animals," and "Pots and Pottery." Great interest was shown in the lectures and the displays of objects from the Museum at their close. There was an average attendance of about two hundred persons, among whom were many of the Society's Members and Subscribers.

The number of visits to the Museum and references to the specimens by collectors, undergraduates of the Victoria University, teachers of Board Schools of the City, accompanied by large classes of scholars, and by scientific men for the handling and examining of types, have been fully equal to those of past years.

A case, illustrating the various forms of Birds' Bills, with labels explaining their structure and modifications, and the habits and nature of the birds which possess such bills, has been added to the collections in the Bird Room.

In the same room a series of Birds' Eggs is being displayed in a table-case. The eggs are mounted on separate tablets, with printed labels describing their structure, form, colour, clutches, the kind of nest which held them, and other aspects of this delightful branch of ornithology.

The specimens in the table-cases illustrating "Attack and Defence amongst Animals" have been re-mounted on opaline glass, and another case has been added in which are shown many interesting examples of mimicry between animals, and the close resemblance of others to their surroundings.

The Council note with pleasure the interest shown by visitors in these and other educational cases added to the Museum in recent years.

A new General Guide to the contents of the Museum has been issued, in which are included descriptions of the later acquisitions.

The gifts to the Museum during the past year have been numerous and valuable.

Mr. F. Haverfield, M.A., Oxford, has presented a Roman milestone, which he procured at Castleford last summer. This interesting object is of rudely-dressed sandstone, irregularly oval in section, and nearly six feet high. On one side are two inscriptions, which run from opposite ends of the stone.

The Society is deeply indebted to Mr. H. Bendelack Hewetson, F.R.G.S., for the gift of a large series of Roman and Egyptian Antiquities.

The Roman objects are chiefly from Ventimiglia, and include a blue vase, two-handled cup, small ewer, basin, and several unguentaria in glass; two phialæ in Arretine ware; sepulchral urns and lamps in terra-cotta, and fragments of objects in bronze.

From Rome is a fine example of a rhyton, terminating in a ram's head.

Many of the Egyptian antiquities are from Old Alexandria, and include two beautiful examples of mummy cases, mounted in an upright glazed case of ebonized wood, a mummy hand, and a cat mummy; two figures of Osiris, head of cat, head and feet of an Ibis in bronze. Five large amphoræ, in stands of wrought-iron, vases, lekythoi, St. Menas' bottles, and lamps in terra-cotta. Porcelain amulets, sepulchral figures, necklaces, finger-rings, scarabs, and other funereal objects. Carved heads of figures in syenite and marble, a sepulchral jar in limestone, and two stone vessels from the Libyan Desert.

It is proposed to arrange all the Egyptian objects in the upright cases in the Inner Vestibule.

The Council have to acknowledge with thanks the receipt of a cheque, value two pounds twelve shillings, from the late Mr. W. H. Rinder, F.R.G.S., Burley, for the purchase of Birds' Eggs for the special display case of these objects now under arrangement in the Museum.

Mr. Edward Atkinson, F.L.S., in addition to the continued gift of the Journal of the Linnean Society, as published, has presented a fine specimen of the Emerald Cuckoo from Cape Colony, and a series of insects collected in British Columbia.

Mr. W. Marsden, Avenue House, Leeds, has sent several skins of aquatic birds, including the European Flamingo, Black-necked Swan, White-fronted Goose, Scaup Duck, Garganey, &c., some of which have been mounted and put in the bird cases.

The general gifts to the Museum include a British Stone Celt from Uttoxeter, by the Rev. T. Thistlethwaite Smith, M.A., Leeds, and a coloured Map of the district south of Rome, showing the position of Lanuvium, by Miss Moseley, of Adel.

The presents to the Library, for which the Council have to thank several gentlemen and many learned societies, include catalogues of the "Corals;" "Tertiary Mollusca," "Fossil Cephalopoda," and "Coins of the Ancients" in the British Museum, from the Trustees of that Institution; "The Invention of Printing," from the author, the Rev. Charles H. Middleton-Wake, M.A.; "A Mathematical Treatise on the Motion of Projectiles," from the author, Mr. Fras. Bashforth, B.D.; and a series of Weather Records from 1832 to 1850, from Mr. E. G. Jepson, Leeds. In addition to the usual generous gifts from the American Government and Societies, the Smithsonian Institute has sent "The History of the First Half-Century of the Smithsonian Institution," a richly-illustrated volume dealing with the administrative work of this institution from 1846 to 1896.

At the Sanitary Congress held in Leeds, in September, 1897, Mr. Richard Reynolds, F.C.S., a member of the Council, and Mr. H. Crowther, the Curator, read a joint paper, printed elsewhere in this Report, on "A Decade of Sunshine Observations in Leeds," which was drawn up from the records which have been made during the last ten years, by means of Jordan's sunshine recorders at the Museum, by the Curators; at Cliff Road, Headingley, by Mr. R. Reynolds; and at Lawnswood, Adel, by Mr. C. S. Irvine. The paper was well received, and was printed in the last issue of "The Journal of the Sanitary Institute."

During the past year considerable expense has been incurred in the cleaning, painting, distempering, and papering of the Museum, Library, and other rooms. The large doors of the Lecture Theatre have been made to swing noiselessly, adding considerably to the comfort of those who attend the meetings.

The ventilation of the Lecture Hall, which at present is far from satisfactory, is receiving attention from the Council.

During the past year the Society has received the sum of £2,000 from Messrs. Wm. Williams Brown & Co., in consideration of rights of light interfered with by the erection of the new Bank in Park Row. This sum has been invested in the names of the Trustees in Midland Railway 2½ % Preference Stock, and will yield an income of about £57 per annum.

Summary of Meteorological Observations taken at the Philosophical Hall, and at Woodhouse Cliff, Leeds, during the year 1897.

1897.	Mean Height of Barometer (inches).	Mean Temperature (degrees).	Earth Thermometer (inches).	Amount of Rainfall.	
				Museum (inches).	Woodhouse Cliff (inches).
January	29·733	35·2	...	2·18	1·92
February...	29·785	42·0	...	2·85	2·92
March	29·318	43·4	40·7	2·59	2·67
April	29·588	44·4	42·1	1·81	1·74
May...	29·728	50·2	47·0	1·29	1·02
June...	29·752	58·7	53·7	2·88	3·12
July	29·747	62·5	56·7	·39	·46
August	29·530	62·8	57·5	2·75	2·76
September	29·699	54·2	52·9	2·17	2·30
October	29·906	49·9	49·2	1·63	1·69
November	29·962	46·8	47·0	2·42	2·28
December	29·586	41·4	41·7	2·53	2·67
Monthly Means ...	29·694	49·2	...	25·49	25·55

Greatest fall of rain (during 24 hours)— ·77 inches on February 5th. Average rainfall at the Museum for the ten years 1888—1897, 25·91 inches.

Greatest degree of heat, indicated by the thermometer in the shade—87·5° on August 5th ; minimum— 24° on January 23rd and December 26th.

Greatest barometric pressure—30·54 inches on December 22nd, the temperature of the mercury being 46°; least pressure—28·47 inches on March 3rd, the temperature of the mercury being 48°.

The readings of the Earth Thermometer are taken by a Symons' instrument, exposed at a depth of 2′ 6″ below the ground at Woodhouse Cliff, and read at 10 a.m. The monthly returns are the means of the daily readings.

The Bench Mark at the corner of the Philosophical Hall is 131·8′ above the Ordnance datum, and ·8′ above the pavement. The cistern of the barometer is 12·8′, the thermometers are 42′, and the rain-gauge is 45′ above the bench mark.

The Hall is situated at 1° 32′ 45″ or 6 min. 11 sec. W., and 53° 47′ 51″ N., and hence g/g_{45} is 1·000774. Taking the standard height of the barometer to be 30″, and the standard temperature to be 62° F, the height of the homogeneous atmosphere is 27860′. To find the height of a barometer at sea level equivalent to a reading of H″, at a temperature of t° F. different from 62° F., add to the reading H″ (·0054 ∓ ·00001t).

SUNSHINE AT LEEDS IN 1897.

The observations recorded below were made by Jordan's Photographic Sunshine Recorder at the following stations in Leeds:—

1. The Museum of the Philosophical and Literary Society, situate in the centre of the city; elevation above the sea, 145 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the city; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the city; elevation, 475 feet; on the fringe of the city.

Months.	Stations.	Hours of sunshine registered.
JANUARY	1	25·25
	2	39·50
	3	51·10
FEBRUARY	1	34·40
	2	47·10
	3	48·15
MARCH	1	81·25
	2	100·30
	3	107·40
APRIL	1	133·05
	2	159·10
	3	167·25
MAY	1	209·15
	2	235·20
	3	247·25
JUNE	1	145·20
	2	149·40
	3	164·30
JULY	1	227·50
	2	231·55
	3	242·25
AUGUST	1	190·35
	3	196·05
	3	206·45
SEPTEMBER	1	122·40
	2	139·25
	3	146·10
OCTOBER	1	66·45
	2	73·40
	3	86·25
NOVEMBER	1	11·55
	2	15·35
	3	21·20
DECEMBER	1	7·20
	2	11·35
	3	14·15

SUMMARY FOR THE YEAR.

	Hours recorded. Hours.	Mins.	Difference from mean of 10 years. H. M.	Per cent. of possible duration.
Museum ..	1,256	15	+230·03	28·45
Woodhouse Cliff	1,399	55	+167·26	31·71
Lawnswood ..	1,503	45	+151·45	34·06

31·40 per cent. mean for 1897.			27·5 per cent. mean for 1892.		
26·5	,,	,, 1896.	22·2	,,	,, 1891.
37·5	,,	,, 1895.	24·4	,,	,, 1890.
29·0	,,	,, 1894.	20·7	,,	,, 1889.
31·6	,,	,, 1893.	19·9	,,	,, 1888.

26·7 per cent. mean for ten years.

The Meteorological Office publishes the following records of sunshine for 1897, as observed at stations taken as representing specified districts:—

Stations.	Number of Hours.	Difference from mean.	Percentage of possible duration.
Scotland, N. (Stornoway, &c.)	1,237	+188	28
,, E. (Aberdeen, Marchmont)	1,350	+ 82	31
,, W. (Glasgow; Douglas, Isle of Man) ..	1,397	+ 24	31
England, N.E. (Durham, York)	1,428	+146	32
,, N.W. (Stonyhurst, Blackpool, Llandudno)	1,512	+140	34
,, Mid. (Cirencester, Oxford, &c.)	1,508	+138	35
,, S. (London, Hastings, Southampton, &c.)	1,692	+ 99	39
,, E. (Hillingdon, Geldestone, Cambridge)	1,601	+ 82	37
,, S.W. (Pembroke, Falmouth, Plymouth, &c.)	1,636	− 2	38
Ireland, N. (Armagh, Markree Castle)	1,287	+ 28	30
,, S. (Dublin, Parsonstown, Valencia) ..	1,430	− 2	33
Channel Islands (Jersey)	1,738	−101	41

SUMMARY.

34·1 per cent. mean for United Kingdom, 1897.			35·2 per cent. mean for United Kingdom, 1892.		
31·8	,,	,, ,, 1896.	32·6	,,	,, ,, 1891.
35·8	,,	,, ,, 1895.	30·7	,,	,, ,, 1890.
31·1	,,	,, ,, 1894.	29·2	,,	,, ,, 1889.
37·0	,,	,, ,, 1893.	27·5	,,	,, ,, 1888.

or 32·5 per cent. mean for ten years.

"*A Decade of Sunshine Observations at Leeds,*" *by* HENRY CROWTHER, F.R.M.S., and R. REYNOLDS, F.C.S.

Ten years ago the Leeds Philosophical and Literary Society added daily records of sunshine to its meteorological observations. The system selected was that invented by Mr. Jordan, and it has proved satisfactory in the facility with which it is carried out. A strip of paper, prepared by a modified ferrocyanide method, is placed in a dark box having small slits on two opposite sides. The box is fixed facing due south on the top of a building, or some other position commanding a clear horizon. When there is direct sunlight the slit having an eastern aspect admits its ray from sunrise until noon, and the same happens from the western slit from noon until sunset. When the paper is removed a dark blue track is found where the sun's rays have impinged upon it. This track is fixed and made permanent by simply washing off the excess of the sensitive salt with cold water. As the paper is ruled with transverse lines to show the hours and their subdivisions, and only direct sunlight produces the dark track, the measurement of this for the day is easily reckoned.

It was obvious that the area of the city would include localities varying in the amount of sunshine which they enjoyed, and the following three stations were selected for observations, viz. :—

1. The Museum, situate in the centre of the city; elevation above the sea, 145 feet. Observer, Mr. Henry Crowther.

2. Woodhouse Cliff, one-and-a-half miles north-west from the centre of the city; elevation, 330 feet; residential suburb. Observer, Mr. R. Reynolds.

3. Lawnswood Cemetery, Adel, four miles north-west from the centre of the city; elevation, 475 feet; on the fringe of the city. Observer, Mr. C. S. Irvine.

It was soon found that the results from these stations maintained fairly constant proportions, but the science of meteorology demands long-continued observations before giving factors that can be satisfactorily compared.

Table A. gives the hours of bright sunshine registered during the ten years 1887 to 1896.

TABLE A.

YEARS.	MUSEUM.	WOODHOUSE CLIFF.	ADEL.
	H. M.	H. M.	H. M.
1887	1,115·03	1,325·55	1,396·18
1888	720·26	944·59	1,021·24
1889	729·35	965·14	1,131·44
1890	851·05	1,128·50	1,242·15
1891	810·55	1,002·05	1,160·30
1892	978·10	1,243·25	1,417·10
1893	1,223·15	1,437·10	1,580·35
1894	1,174·55	1,313·05	1,417·00
1895	1,530·00	1,672·30	1,821·30
1896	1,007·00	1,217·00	1,324·05
	10,140·24	12,250·13	13,512·31

Deficiency of Museum from Adel: mean percentage of ten years, 25·4.

Deficiency of Woodhouse Cliff from Adel: mean percentage of ten years, 9·4.

The recording station at Adel has been selected under the belief that the sunshine there is but little obstructed by the smoke of the city, and that Adel consequently represents the type of the normal atmosphere of the locality. Woodhouse Cliff is about halfway between Adel and the Museum, and its records of sunshine are nearly always intermediate between those of the two other stations.

When the observations had been continued for a year or two, they were re-cast, in order to distinguish any differences between the records of Sundays and working-days. These are shown on Table B.

TABLE B.

	MUSEUM.		WOODHOUSE CLIFF.		ADEL.	
	Sundays.	Mean of other days.	Sundays.	Mean of other days.	Sundays.	Mean of other days.
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1887	172·54	157·01	196·20	188·16	212·08	197·21
1888	135·55	97·25	170·41	129·03	184·40	139·27
1889	97·15	105·23	115·10	141·40	131·07	166·46
1890	164·05	114·30	204·25	154·04	208·55	172·13
1891	128·25	113·45	137·05	144·10	152·25	168·01
1892	181·20	132·48	211·30	171·59	214·50	200·23
1893	209·55	168·53	232·05	200·51	243·00	222·56
1894	167·20	167·56	180·30	188·46	188·50	204·41
1895	262·40	211·13	284·50	231·16	292·10	254·53
1896	173·15	138·57	198·25	169·46	208·55	185·51

Mean percentage for ten years 1887 to 1896:—

	MUSEUM.	WOODHOUSE CLIFF.	ADEL.
Sundays ...	169·1 ...	193·0 ...	203·4
Mean of other days	140·4 ...	171·6 ...	191·1

Deficiency of Museum from Adel: Sundays, 16·8; other days, 26·7.

Deficiency of Woodhouse Cliff from Adel: Sundays, 4·0; other days, 10·5.

It is thus seen that on days other than Sundays the normal sunshine of Adel loses 26·7 per cent. at the Museum, and 10·5 per cent. at the intermediate station of Woodhouse Cliff. On Sundays the loss is less, being 16·8 per cent. at the Museum, and 4·0 per cent. at Woodhouse Cliff. Truly, here is a new reason for calling the first day of the week Sun Day. Some readers of these results will be likely to feel surprise that the practical cessation of manufacturing smoke for about thirty-six hours should not produce a greater improvement in the sunshine of the central station. But, putting aside any preconceived ideas, we must accept the fact that the agencies still operative on Sundays are responsible for 16·8 per cent. of the diminished sunshine. These are, firstly, the natural haze of a valley station with its river, and secondly—and chiefly—the products of the burning of coal for domestic purposes. We shall recognise that the producer of manufacturing smoke has in a large number of cases brought science to his aid in diminishing the amount of

unconsumed carbon which he throws into the atmosphere, and that he reaps the reward of this good deed. On the other hand, the householder with his tens of thousands of fireplaces has had little done for him in guidance towards the same laudable object. The use of gas as a fuel for domestic purposes may be extended in the future, and would work for our object. But much is possible in the arrangements for burning coal for domestic use, and Leeds is justly proud of the contribution to solving the problem made by our fellow-citizen, Mr. T. Pridgin Teale, F.R.S., &c., in the fireplaces that bear his name.

It may be of interest that the actual figures for each day of the week should be recorded. This is done in Table C.:—

TABLE C.

Museum.

	SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1887	172·54	165·31	181·40	136·38	167·02	123·07	168·11
1888	135·55	77·29	115·51	89·04	124·16	92·11	85·40
1889	97·15	117·10	104·15	113·05	106·00	84·45	107·05
1890	164·05	103·50	101·05	122·30	95·25	133·55	130·15
1891	128·25	119·00	96·25	134·20	105·20	120·40	106·45
1892	181·20	146·30	109·00	118·20	124·35	148·50	149·35
1893	209·55	182·40	152·15	183·40	171·50	155·00	168·10
1894	167·20	148·15	162·50	125·00	210·30	162·40	198·20
1895	262·40	219·00	201·00	199·00	185·40	235·50	225·50
1896	173·15	166·30	161·10	115·45	139·05	133·50	117·25
Total ...	1,693·04	1,445·55	1,385·31	1,337·22	1,429·43	1,390·48	1,457·16
Mean ...	169·18	144·35	138·33	133·44	142·58	139·04	145·44

Woodhouse Cliff.

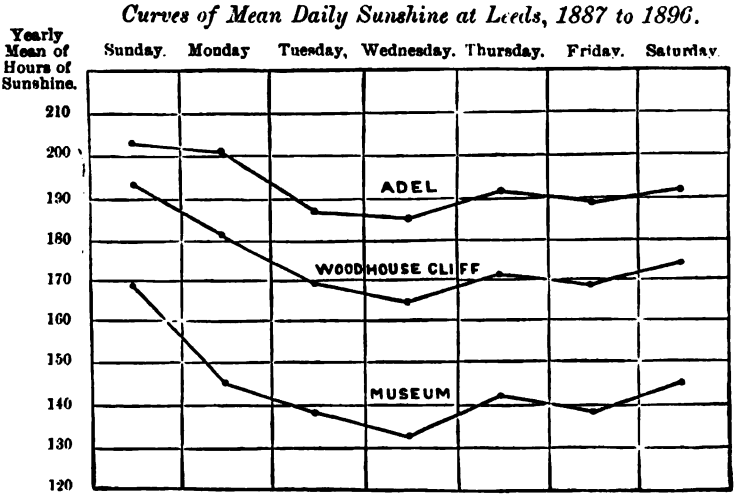
	SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1887	196·20	191·07	220·35	167·10	197·58	152·42	200·03
1888	170·41	123·51	143·58	122·59	150·44	117·17	115·29
1889	115·10	148·55	135·10	144·52	140·55	130·12	150·00
1890	204·25	148·15	143·30	163·55	128·55	167·55	171·55
1891	137·05	156·30	123·50	154·35	138·10	154·15	137·40
1892	211·30	192·10	143·40	153·45	163·55	192·25	186·00
1893	232·05	216·20	185·05	214·25	197·20	191·30	200·25
1894	180·30	173·50	191·40	143·25	228·50	173·55	220·55
1895	284·50	250·00	226·50	224·10	205·00	251·40	230·00
1896	198·25	205·05	184·35	161·40	161·50	161·40	143·45
Total ...	1,931·01	1,806·03	1,698·53	1,650·56	1,713·37	1,693·31	1,756·12
Mean ...	193·06	180·36	169·53	165·05	171·21	169·21	175·37

Adel.

	SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1887	212·08	202·33	219·53	183·36	197·57	172·13	207·58
1888	184·40	134·03	151·37	132·09	159·50	122·03	137·02
1889	131·07	178·25	158·35	171·55	167·50	161·27	162·25
1890	208·55	169·25	173·20	180·35	140·30	180·55	188·35
1891	152·25	182·05	144·20	183·05	159·55	180·35	158·05
1892	214·50	217·35	186·25	183·35	191·25	211·30	211·50
1893	243·00	236·20	197·15	232·40	236·30	210·05	224·45
1894	188·50	181·50	204·00	173·10	247·30	202·40	219·00
1895	292·10	276·30	248·30	243·50	236·00	265·40	258·50
1896	208·55	230·30	198·30	176·50	176·35	186·55	145·50
Total ...	2,037·00	2,009·16	1,882·25	1,861·25	1,914·02	1,894·03	1,914·20
Mean ...	203·44	200·55	188·14	186·08	191·24	189·24	191·26

Over-refinement in theorising upon these data is needless, but the partial improvement of the central station on Saturdays is clear, as is one on Thursday, probably due to the Wednesday half-holiday of those tradespeople who must attend to their businesses on the Saturday. These improvements are best shown by the following diagram, drawn from the means given on Table C., of the "Curves of Mean Daily Sunshine at Leeds, 1887 to 1896":—

Curves of Mean Daily Sunshine at Leeds, 1887 to 1896.



For better or worse? The records of sunshine already given are the results of more than 10,000 observations, and their interest to many will be prospective rather than retrospective. By a slow and patient process of collecting present facts we are in possession of data giving a "value" for the atmospheric pollution of ten years. Are we improving or deteriorating? If the same influences operate in the same way, we ought to find that the increase of population and of manufactories during the period would have the effect of making worse what was bad before. The population of Leeds in 1887 may be taken as about 350,000; in 1896 it was assumed to be 400,000.

If our atmosphere holds its own against this increasing stress and strain it is something to the good. In constructing Table D for the purpose of a reply to this question, we have preferred to take for comparison five periods of two years each.

TABLE D.

	MUSEUM.	WOODHOUSE CLIFF.	ADEL.
	H. M.	H. M.	H. M.
1887 / 1888	1,835·29	2,270·54	2,417·42
1889 / 1890	1,580·40	2,094·04	2,373·59
1891 / 1892	1,789·05	2,245·30	2,577·40
1893 / 1894	2,398·10	2,750·15	2,997·35
1895 / 1896	2,537·00	2,889·30	3,145·35

Deficiency of Museum from Adel:—

1887-88	...	24·0 per cent.
1889-90	...	33·4 "
1891-92	...	30·5 "
1893-94	...	20·0 "
1895-96	...	19·3 "

or a mean deficiency on ten years of 25·4 per cent.*

* The Sunshine Records, at the Museum during 1897, show a striking improvement in comparison with Adel, the mean deficiency of 1895-96 being 19·3 per cent., that of 1897, 16·5 per cent. During many months of this period a great engineering strike led to the closing of many of the large workshops of the city, so that probably when the mean of a two-year period is taken, say 1897 and 1898, a period similar to those on which

Our answer may be considered satisfactory and encouraging. The last two-year period places the atmosphere of the central station in a better position than any of the four preceding two-year periods, and this has occurred in spite of the steady increase of both population and buildings in the city. Whilst regarding these results as encouraging, we feel that their legitimate application is as a stimulus to further endeavours to attain the blessing of a purer atmosphere.

We hope that the present paper has been successful in showing that a method of sunshine recording, adopted by hundreds of observers throughout Britain, and recognised by the Authorities of the Meteorological Office, as proved by the inclusion of many records by the Jordan instrument in its Weekly Weather Report, may prove a valuable means of estimating not only the actual, but the relative, pollution by smoke of a town's atmosphere. The method is simple and inexpensive. The records are permanent, and available for confirmation or refutation if needed, and they may be compared with abundant observations in other places. The adoption of a normal station just outside the corrupted atmosphere, and the study of the facts observed in relation to days of greater or smaller activity of manufacturing operations, are the points on which we venture to think that our method has novelty.

It is proper to state that all the sunshine papers when fixed and washed are sent weekly to the central station at the Museum, where their respective values are computed by the same person, and the figures appear in the Weekly record published in the local newspapers.

---

the previous deficiencies, as compared with Adel, were calculated, the deficiency may be greater than stated for 1897 only.

Sunshine :—

	MUSEUM.	WOODHOUSE CLIFF.	ADEL.
	Hours.	Hours.	Hours.
Half of last two-year period, 1895-96 ...	1,268	1,445	1,573
During 1897	1,256	1,400	1,503

Deficiency of Museum from Adel :—

Half of last two-year period, 1895-96 ... 19·3 per cent.

One-year period, 1897 ... 16·5 „

"*The Roman Milestone, found at Castleford, now in the Leeds Museum,*" *by* F. HAVERFIELD, M.A., F.S.A.

The Roman Milestone, which is the subject of the following note, was found in or about 1880 at Castleford. The place of the discovery was near the south end of Beancroft Road, just at the junction of that road and Beancroft Street; the occasion was the laying of a public drain four or five feet below the surface. Beancroft Road almost exactly overlies a piece of Roman road, a part, namely, of the great highway often though erroneously called Watling Street, which led from York past the "stations" of Tadcaster, Castleford, and Doncaster to Lincoln. The milestone must, therefore, have been found very close to a Roman road, and, in all probability, very close to its original position. The "station" at Castleford occupied the site of the present All Saints' Church and Rectory and Castle-house, close to the River Aire, just half-a-mile north of the place where the milestone was found. The stone came into the possession of Mr. Joseph H. Brewerton, formerly town-surveyor of Castleford, now of Glen Road, Boscombe, and was set up by him in the garden of his father's house, situate between Beancroft Street and Love Lane, and then called Storrsville; the ordnance map calls it Storesvilla, and it is now known as Lansdown Villa: it is about 100 yards from the spot where the stone was unearthed. Here I found it in September, 1897, purchased it, and presented it to the Leeds Museum. I have to thank Mr. W. E. Garforth, of Halesfield, Normanton, Mr. R. Birdsall, of Northampton, and Mr. Brewerton for information concerning the stone, communicated to me at various times before 1897.

The stone is a block of sandstone, about five feet long and ten inches in diameter. It bears two inscriptions, one at each end. When first erected, in the reign of the Emperor Decius Traianus (A.D. 249—251), it was inscribed with his name and titles. After his death, it was inverted and reinscribed at the other

end with the names and titles of his successors, the conjoint emperors, Vibius Gallus and Vibius Volusianus (A.D. 251—253). The inscriptions were first published from an imperfect copy by the late Mr. W. T. Watkin, of Liverpool, in the "Academy" for Feb. 28th, 1885, and in the "Archæological Journal" xlii. (1885), p. 154: I reprinted his readings in the "Ephemeris Epigraphica" (vii. nos. 1104, 1105). I have now been able to examine the stone myself, and have been aided by squeezes which Mr. H. Crowther, Curator of the Leeds Museum, has made for me.

The inscriptions appear to be as follows:—

(*a*)		and	(*b*)	
	IMPC			IMPP
	CMQ			CCVIBIO
	DECIO			GALLOETCV
	FCM			VOLVSIA
5	QFRV		5	NOPF
	CO			AVGG EB
				MPXX

The third, fourth, and fifth lines of (*a*) are indistinct, and there may have been one or two numerals after or below XX (XXI or XXII) at the end of (*b*). Provisionally, one may expand, thus:—

(*a*) *Imp(eratore) C(aesare) C. M(essio) Q(uinto) Decio:* what follows may contain his son's name, Etruscus.

(*b*) *Imp(eratoribus) C(aesaribus) C. Vibio Gallo et C. V(ibio) Volusiano p(iis) f(elicibus) Aug(ustis), Eburaco m(illia) p(assuum) XX..*

The indication of distance from Eburācum (York) is interesting. By the line of the Roman road through Tadcaster and Aberford, the distance from York to Castleford is about twenty English miles. The Itinerary gives twenty-one Roman miles (pp. 475, 478 Wess.). The Roman mile was a trifle shorter than the English mile, so that the agreement is fairly close. It will be even closer, if we assume that our milestone was the

twenty-second, and that the twenty-first milestone stood half a mile north of Castleford "station," just as this stands half a mile south. In that case, the actual distance from York to Castleford would have been, by the Roman road, twenty-one and a half Roman miles.

The streets and sites in Castleford mentioned above may be conveniently seen on the twenty-five inch maps of the Ordnance Survey for the West Riding of Yorkshire, No. CCXXXIV. 7 and 11.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the year 1897-8.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1897		—		0	17	7
,, Annual Subscriptions, viz.:—						
76 New Proprietary Members, at 21s. ...	79	16	0			
2 Original Ordinary ,, 42s. ...	4	4	0			
58 New Ordinary ,, 21s. ...	60	18	0			
120 Annual Subscribers, at 21s.	126	0	0			
108 Annual Subscribers, at 7s. 6d. ...	40	10	0			
,, Arrears	3	3	0			
				314	11	0
,, Rent, viz.:—						
Cellars	40	0	0			
Lecture Room	176	1	6			
				216	1	6
,, Receipts from Visitors to Museum ...				97	9	6
,, Sale of Guides	2	12	4			
,, Bank Interest on Deposit	36	8	6			
,, Balance on Investment of £2,000 ...	0	14	9			
,, Sundries	3	14	9			
				43	10	4
,, Sale of Forfeited Shares				15	0	0
,, Balance due to Bank				43	12	11
				£731	2	10

PAYMENTS	£	s.	d.	£	s.	d.
By Balance Due to Bank, May 1st, 1897 ...				0	12	2
,, Repairs and Alterations	144	0	3			
,, Rates and Taxes	20	13	10			
,, Fire Insurance	12	10	0			
,, Coals, &c.	19	18	7			
,, Gas and Water	23	3	1			
,, Cleaning	10	10	6			
				230	16	3
,, Salaries and Wages	307	1	0			
,, Fee to Auditors	2	2	0			
				309	3	0
,, Collections, Library, and Scientific Apparatus				34	4	4
,, Postages	9	12	0			
,, Advertising and Printing	33	12	8			
,, Lectures	92	5	5			
,, Bank Commission	0	9	0			
,, Sundries	15	6	6			
				151	5	7
,, Electric Light Supply				4	1	11
,, Balance in hand				0	19	7
				£731	2	10

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

LEEDS, *May 16th, 1898.*

BEEVERS & ADGIE,
CHARTERED ACCOUNTANTS.

CAPITAL ACCOUNT.

	£	s.	d.
Amount received as Compensation for Lights	2000	0	0
	£2000	0	0

	£	s.	d.
Invested in £2,270 Preference 2½% Midland Railway Stock	1999	5	3
Balance carried to Income Account, above	0	14	9
	£2000	0	0

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1897-8.

ZOOLOGY.

Emerald Cuckoo (*Chrysococcyx smaragdineus*); from Cape Colony ..... A small series of Insects collected in British Columbia.....	Mr. Edward Atkinson, F.L.S., Harrogate.
Skins of Black-necked Swan (*Cascaroba melanocephala*; European Flamingo (*Phœnicopterus antiquorum*); Garganey (*Querquedula circia*); Scaup Duck (*Fuligula marila*); White-fronted Goose (*Anser albifrons*).....	Mr. W. Marsden, Avenue House, Leeds.
Osteological preparation of the Head of a Guinea Fowl (*Numida meleagris*).....	R. J. Gawler, Medical School, Leeds.
Specimen of Butterfly (*Doritis apollo*), from Trollhattan, Sweden	Mr. W. S. Cameron, Leeds.
Cheque of the value of £2 12s. 0d., for the purchase of a series of Birds' Eggs for display in the Museum	The late Mr. W. H. Rinder, F.R.G.S., Burley.

MINERALOGY.

Nodule of Clay Ironstone in blue bind, from West Riding Colliery, Altofts	Mr. W. E. Garforth, F.G.S., Halesfield, Normanton.

ARCHÆOLOGY & ETHNOLOGY.

A large series of Roman and Egyptian Antiquities, many of which were collected by the donor at Ventimiglia and Old Alexandria:— Ventimiglia: Blue glass vase with calcined bones, ring and coin; two-handled glass cup, small ewer, basin, and several unguentaria in glass; phialæ in Arretine ware; lekythoi and lamps in terra-cotta; and fragments of objects in bronze..... Five large amphoræ in stands of wrought-iron; lekythoi, vases, St. Menas' pilgrim-bottles, lamps, chiefly Coptic; Shells (*Murex* and *Ampullaria*); spatula for inlaying; fragments of chalcedony, and small objects in glass from Old Alexandria	Mr. H. Bendelack Hewetson, F.L.S., F.R.G.S., Leeds.
One-handled terra-cotta vase from the Nile Delta; syenite cores from sarcophagi from the Pyramids; Coptic lamps in terra-cotta, and vases of stone from the Libyan Desert; cartouch and heads of figures in syenite, sepulchral jar, with jackall-head cover in limestone, blue mummy beads in glass, amulets, mummy figures, scarabs, necklaces and rings in porcelain. Figures of Osiris, bracelets, head and feet of Ibis in bronze	
Two Mummy-cases, mummy hand, and cat mummy, displayed in an upright ebonised glass-case	
Rhyton, terminating in a ram's head, from Rome; bronze smelting pot from excavation at the Abbey of St. Victa, Marseilles	
British stone celt from neighbourhood of Uttoxeter	The Rev. T. Thistlethwaite Smith, M.A., Virginia Road, Leeds.

Roman milestone found at Castleford	F. Haverfield, M.A., F.S.A., Christ Church, Oxford.
Coloured Map of the district south of Rome	Miss Moseley, Adel.

PUBLICATIONS.

Catalogue of Welwitsch's African Plants, Part I. ..... Catalogue of the Fossil Cephalopoda, Part III. ..... Catalogue of the Tertiary Mollusca, Pt. Australia ..... Guide to the Fossil Invertebrates and Plants ..... Guide to the Fossil Mammals and Birds Guide to the Fossil Reptiles and Fishes Catalogue of the Madreporian Corals, Vol. III.	The Trustees of the British Museum.
Metastasis, by Wm. R. Tomlinson, late Rector of Sherfield English, Southampton	The Author.
The History of the First Half-Century of the Smithsonian Institution, 1846—1896	The Institution.
The Invention of Printing, a series of four lectures delivered at Cambridge, in the Lent Term of 1897...	The Author, Rev. C. H. Middleton-Wake, M.A.
The History of the Pianoforte	The Author, Edgar Brinsmead.
Mathematical Treatise on the Motion of Projectiles ..... Tables of remaining Velocity, Time of flight, and Energy of various Projectiles ..... Experiments made with the Bashforth Chronograph	The Author, Francis Bashforth, B.D.
A Decade of Sunshine Observations in Leeds, by Henry Crowther, F.R.M.S., and R. Reynolds, F.C.S.	The Authors.
Official handbook of the Dominion of Canada	The Canadian High Commissioner, London.

Year-book of the Royal Society, 1896-97 and 1897-8	The Royal Society.
Notes on some recent discoveries in the Realm of Assyriology.....	The Author, Theo. G. Pinches, M.R.A.S.
The Babylonian Chronicle.....	
The Lament of the Daughter of Sin..	

PERIODICALS.

WEEKLY.

Nature	Purchased.

MONTHLY.

Annals and Magazine of Natural History.....	Purchased.
Geological Magazine	Purchased.
Journal of the Chemical Society	Purchased.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society.....	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science.....	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.
Journal of the Linnean Society	Mr. Edward Atkinson, F.L.S.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions.....	Purchased.
Proceedings of the Royal Society ...	The Society.
Proceedings of the Royal Institution of Great Britain	The Institution.
Publications of the Ray Society	Purchased.
Abridgments of Specifications for Patents, Period 1884—88; 1889—92	The Comptroller-General of Patents.
British Association Report.....	The Association.
Greenwich Observations.....	The Astronomer-Royal.
Memoirs of the Royal Astronomical Society	The Society.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall, 1896	Purchased.
Monograph of the Palæontographical Society	Purchased.
Proceedings of the Yorkshire Geological and Polytechnic Society.....	The Society.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Liverpool Geological Society.....	The Society.
Journal of the Liverpool Geological Association	The Association.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne.....	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society	The Society.
Report of the Committee of Leicester Town Museum	The Museum.
Report of the Royal Institution, Hull	The Institution.
Report of the Meteorological Department of the Borough of Southport.	The Meteorological Observer.

Annual Report of the Brighton Town Museum	The Museum.
Annual Report, Middlesex Hospital...	The Hospital.
Annual Report of the Birkenhead Literary and Scientific Society	The Society.
Proceedings of the Liverpool Literary and Philosophical Society	The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association	The Association.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society	The Society.
Transactions of the Manchester Geological Society	The Society.
Reports of the Manchester Museum Handbooks do. do.	The Keeper.
Annual Report of the Sheffield Literary and Philosophical Society	The Society.
Annual Report of the Chester Society of Natural Science and Literature	The Society.
Transactions of the Leeds Naturalists' Club and Scientific Association.....	The Association.
Journal of the Royal Institution of Cornwall	The Institution.
Annual Report of the Royal Cornwall Polytechnic Society.....	The Society.
Report of Associated Architectural Societies	The Association.
Journal of the Chester Archæological and Historic Society	The Society.
Geological Record	Purchased.
Transactions of the Yorkshire Naturalists' Union	The Union.
Proceedings of the Royal Society of Edinburgh ..... Transactions do. do.	The Society.
Transactions of the Edinburgh Geological Society.....	The Society.

Proceedings of the Glasgow Philosophical Society	The Society.
Proceedings of the Berwickshire Naturalists' Club	The Club.
Scientific Proceedings of the Royal Dublin Society.....	The Society.
Scientific Transactions do.	
Transactions of the Royal Irish Academy	The Academy.
Proceedings do. do.	
Journal of the Royal Geological Society of Ireland	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	The Club.
Publications of the Royal Swedish Academy of Sciences.....	The Academy.
Papers of the Royal University of Norway	The University.
Bulletin of the Geological Institution of the University of Upsala	The Institution.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger.....	Royal Danish Society of Sciences.
Bulletin, Société Impériale, Moscow...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deutschen Akademie der Naturforscher	The Academy.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien ...	The Society.
Memoirs of the National Academy of Sciences	The Academy.
Report of Australasian Association for the Advancement of Science.....	The Association.
Journal and Proceedings of the Royal Society of New South Wales	The Society.
Journal of the Royal Geographical Society of Australasia	The Society.
Wealth and Progress of New South Wales	The Agent-General.

Records of the Geological Survey of New South Wales	The Surveyor.
Memoirs of the Geological Survey of New South Wales	
Annual Report and Papers of the Department of Mines and Agriculture, New South Wales	The Department.
Prodromus of the Zoology of Victoria	The Editor.
Records of the Australian Museum	The Trustees.
Report of the Trustees of the Australian Museum.....	
Proceedings of the Royal Society of Queensland	The Society.
Queensland Agricultural Journal	The Society.
Annals of the Queensland Museum, No. 1.....	The Trustees.
Transactions and Proceedings of the New Zealand Institute	The Institute.
Papers and Proceedings of the Royal Society of Tasmania	The Society.
Proceedings and Transactions of the Royal Society of Canada	The Society.
Proceedings of the Canadian Institute	The Institute.
Annual Report do.	
Transactions do.	
Proceedings and Transactions of the Nova Scotian Institute of Natural Science	The Institute.
Annual Report, Hamilton Public Library, Ontario, Canada	The Librarian.
Journal and Proceedings of the Hamilton Association	The Association.
Geological and Natural History Survey of Canada	Department of the Interior.
Annual Report and Papers—do.	
Contributions to Canadian Palæontology	
Bulletin of the Natural History Society of New Brunswick.....	The Society.
Memorias de la Sociedad Científica (Mexico)	The Society.

"Boletin Mensual" Observatorio Meteorologico-Magnetico Central de Mexico	The Editor.
Annuario del Observations Astrónomico Nacional, Mexico	The Astronomer.
Boletin del Observatorio Astronómico Nacional de Tacubaya	The Observer.
Report of the Museum National, Rio-de-Janeiro	Directeur-Général.
Archivos do.	
Cape Meridian Observations	Cape Astronomer-Royal.
Report of H.M. Astronomer at the Cape of Good Hope to the Secretary of Admiralty	
Transactions of the American Philosophical Society	The Society.
Proceedings do.	
United States Geological Survey, Annual Report	The Department.
Contributions to American Ethnology.	
United States Geographical and Geological Survey	
United States Department of Agriculture, Publications of	The Department.
Some Common Birds in their relation to Agriculture	
Report of the Smithsonian Institution	The Institution.
Smithsonian Miscellaneous Collections	
Smithsonian Contributions	
Annual Reports of the Bureau of Ethnology	
Miscellaneous Publications of the Bureau of Ethnology	
Proceedings of United States National Museum	The Museum.
Report do. do.	
Bulletins do. do.	
Transactions of the Academy of Science of St. Louis	The Academy.
Proceedings of the Academy of Natural Sciences of Philadelphia...	The Academy.
Papers do. do.	

Proceedings of the American Academy of Arts and Sciences.....	The Academy
Transactions of the Wisconsin Academy of Sciences, Arts, and Letters	The Academy.
Memoirs of the National Academy of Sciences, Washington.....	The Academy.
Proceedings of the Davenport Academy of Natural Science.....	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia ...	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba	The Society.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science	The Union.
Proceedings of the Boston Society of Natural History, U.S.A. ..... Memoirs do.	The Society.
Bulletins of the Essex Institute, U.S.A.	The Institute.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College ..... Annual Report of Harvard College	The College.
Harvard University Catalogue	The University.
Annual Report of the Chicago Academy of Sciences.....	The Academy.
Transactions of the Astronomical Observatory of Yale University ... Annual Report do. Report of the President of Yale University ..... Catalogue do. do.	The University.
Journal of the Elisha Mitchell Scientific Society	The Society.
Tufts College Studies.....	The College.
Transactions of the Meriden Scientific Association	The Association.

LIST OF OFFICERS AND COUNCIL,

1898-9.

OFFICERS.

PRESIDENT	NATHAN BODINGTON, Litt.D
VICE-PRESIDENTS. . .	REV. CHAS. HARGROVE, M.A. EDMUND WILSON.
HONORARY SECRETARIES .	ARTHUR SMITHELLS, B.Sc. E. K. CLARK, M.A., M.Inst.C.E.
TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	J. A. NUNNELEY, M.B.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. LOUIS C. MIALL, F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. J. H. D. MATTHEWS, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

JAMES E. BEDFORD, F.G.S.	THOMAS SCATTERGOOD.
T. WALTER HARDING.	T. P. TEALE, M.A., F.R.S.
THOMAS MARSHALL, M.A.	J. H. WICKSTEED, M.Inst.C.E.
HENRY JOHN PALMER.	J. J. WILLSON.
RICHARD REYNOLDS, F.I.C.	RICHARD WILSON.

Secretary . . .	W. F. HUSBAND, LL.B.
Curator . . .	HENRY CROWTHER, F.R.M.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1898-9.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	*Aldam, Wm.	
3	Armitage, Robert	Farnley.
4	Arthington, Robert	Falmouth.
54	Bailey, Benson	14, Kelso Road.
49	Baines, Mrs. Arthur	The Heath, Adel.
5	*Baines, Herbert S.	
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, Sir John, Bart.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	Broomfield Crescent, Headingley.
11	*Brown, James	
31, 62	Brown, Wm. J. (2 shares)	Burghwallis Hall, Doncaster.
13, 14	*Calverley, Edmd. (2 shares)	
15	Charlesworth, C. H.	6, Queensborough Terrace, Hyde Park, London, W.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	Greek Street.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
26	*Ellershaw, John	
28	Empson, Christopher	Mill Mount, York.

29, 48	Ford, J. R. (2 shares) .	Quarrydene, Weetwood.
72	Gaunt, Leonard .	Hazelbrae, Farsley.
33	*Goodman, Benjamin .	
36-8	Gott, Wm. Henry (3 shares)	
61	Greenhow, Wm. T. .	Newton Cottage, Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
27	Hall, William .	Hillside, Headingley.
39	*Harding, T. R. .	
64	Harding, Thomas Walter .	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Regent Villas, Cumberland Rd.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	102, Lexham Gardens, Kensington, London, S.W.
30	Horsfall, J., M.A., F.R.C.S.	Cambray, Richmond Hill, Bournemouth E.
47	Ingham, John P. .	14, East Parade.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	The Limes, Kirkstall Lane, Leeds.
34	Lumb, George Denison .	65, Albion Street.
57	Lupton, Charles .	The Harehills, Roundhay.
32	Lupton, Edward Basil .	Moorlands, Headingley.
53	Lupton, Francis M., M.A.	Rockland, Newton Park.
56	Lupton, Sydney, M.A. .	A. Audley Mansions, 44, Mount Street, London, W.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	*Marshall, Arthur, F.G.S. .	
60	*Marshall, John, M.A. .	
66	Marshall, Reginald Dykes	Castlerigg Manor, Keswick.
67	Marshall, V. A. E., B.A. .	Monk Coniston, Ambleside.
50	Mason, Charles Letch .	Moorland Terrace.
65	Miall, Prof. Louis C., F.R.S.	Crag Foot, Ben Rhydding.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
17	Padgett, Frederick A. .	13, Cookridge Street.

46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
69	*Rhodes, John .	
70	*Shepherd, John .	
10	Streatfeild, Richard James.	The Rocks, Uckfield, Sussex.
71	Tatham, Miss .	Springfield Mount.
52	Taylor, Benjamin .	20, Moorland Road.
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	
35	Truro, The Bishop of .	Trenython, Par Station, Cornwall.
75	Walker, Edward .	32, Springfield Mount.
76	Ward, William .	12, Bank Street.
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	Denison Hall.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S..	Langholme, Franklin Road, Harrogate.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	*Baines, Frederick .	
2	*Balme, E. B. Wheatley, M.A.	
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford .	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	2, East Parade.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
89	Boston, Richard .	Boar Lane.
10	Bowling, John .	Newstead House, Spencer Place.
49	Braithwaite, William .	Throstle Nest, Horsforth.
5, 6	Brown, G. W. (2 shares) .	78, Belsize Park Gardens, Hampstead, London.

37	Bulmer, Miss .	Blenheim Lodge.
1	Burrell, Benjamin A., F.I.C.	5, Mount Preston.
86	*Carter, J. B. .	
9	*Chadwick, William .	
77	Clark, Edwin Kitson, M.A.	9, Hyde Terrace.
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	9, Carlton Grove, Blackman Lane.
104	Crawford, John William .	Newton Lane.
26	Dawson, Oswald .	Albion Walk Chambers, Leeds.
19	Fairbairn, Sir Andrew .	Askham Grange, near York.
118	Flitch, John R. .	Moortown.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gibson, Rev. E. C. S., D.D.	Leeds Vicarage.
102-3, 106-10, 114-15	Gott, William Henry (P) (9 shares) .	
22	Hargrave, Charles .	
23	*Hargrave, James .	
7	Hargrove, Rev. C., M.A. .	10, De Grey Terrace.
16	Harvey, William .	The Grove, Roundhay.
81	Hatch, S. C. .	
44	Hepper, Mrs. J. H. .	Quebec House, Harrogate.
51	Hoggard, Alfred .	25, Cavendish Road.
98	Howgate, William .	21, Blenheim Terrace.
36	*Hudson, Henry .	
84	Hummel, Prof. J. J. .	152, Woodsley Road.
120	Ingham, Samuel .	Headingley Hall.
56	James, Christopher William	South View, Potternewton Lane.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Harehills, Leeds.
40	Joy, William Lomas .	Brentwood, Beverley.
43	*Kitson, James .	
46	Kitson, J. Hawthorn .	Elmete Hall, Roundhay.
47	Kitson, Sir Jas., Bart., M.P.	Gledhow Hall.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.

90	Lawson, Frederick W. .	Oaklands, Adel.
50	Leather, Ernest Arthur .	Woodland View, Boston Spa, R.S.O.
53	Lupton, Mrs. Arthur .	Headingley.
95	Lupton, Arthur Greenhow	Wellington Street.
8	Lupton, Henry .	Lyndhurst, Headingley.
99	Lupton, Hugh	Mount Pleasant, Leeds.
54	*Lupton, Joseph .	
55	Lupton, Mrs. John .	Moorlands, Headingley.
21	Lupton, Oliver .	Shireoak Road, Headingley.
63, 100	Lupton, Fras. Martineau, M.A. (P) (2 shares) .	Rockland, Newton Park.
88	*McGuire, Thomas .	
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Regent Villas, Cumberland Road.
60	Marshall, Thomas, M.A. .	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D. .	Grammar School, Leeds.
27	Maude, William Henry .	Middleton Lodge, Leeds.
117	Middleton, Arthur .	Calverley Chambers, Victoria Sq.
33	Muir, James .	South Haven, Beach Road, Weston-super-Mare.
66	Nicholson, A. H. .	
30	Nicholson, Marshall .	Middleton Hall, near Leeds.
64	*Nickols, Richard .	
67	Nunneley, A. G. .	Wanstead House, Burley, Leeds.
68	Oxley, James Walker .	28, Commercial Street.
93	Palmer, Henry John .	55, Albion Street.
28	*Passavant, P. W. .	
82	Pearson, John Thomas .	The Hall, Melmerby, S.O.
11	Price, Mrs. William N. .	Hillary Place.
38	*Ralph, John, M.A. .	
34	*Ransome, Prof. Cyril, M.A.	
69	Reynolds, Richard, F.I.C. .	Cliff Lodge, Hyde Park.
72	Rider, James .	8, Beech Grove Terrace.
18	Robson, A.W. M., F.R.C.S.	Moor Road, Headingley.
105	Ryder, Charles .	Gledhow Hill.

112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
119	Schunck, John Edward	Gledhow Wood, Gledhow.
57	Stringer, John William	Inglebank, Far Headingley.
73	Teale, T. P., M.A., F.R.S.	North Grange, Headingley.
74	Teasdale, Washington, F.R.A.S.	Headingley.
76	*Tennant, Thomas	
78	*Tetley, F. W.	
58	Thompson, Chas. F.	Rowangarth, Ben Rhydding.
79	*Turner, Richard B.	
80	Wailes, William	2, Albion Place.
71	Ward, John	Moor-Allerton House.
111	*Watson, William Henry	
41	Webb, Joseph S.	26, Park Row.
97	Weston, Edward	Newton Park Villa, New Leeds.
42	Whiting, John	Cliff Road.
83	Wicksteed, J.H., M.Inst.C.E.	Weetwood Croft, Far Headingley.
31	Wilkinson, William M.	220, Newton Hill.
85	*Wilson, John	
17	Wilson, Richard	28, Commercial Street.
35	Wood, Philip T.	22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah	29, Meadow Lane.
13	Stratten, Rev. Canon	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert	13, St. John's Terrace.
48	Barran, Rowland H.	Beechwood, Roundhay.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E., F.G.S.	Arncliffe, Shireoak Road.

7	Best, Mrs. William W. .	31, Lyddon Terrace.
40	Bodington, Prof. N., Litt.D.	Shireoak Road, Headingley.
8	*Bolland, W. T. .	
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George .	Wood Lane, Headingley.
72	Brigg, Matthew A. .	12, Sholebroke Avenue.
11	Briggs, Riley .	Springfield Mount.
75	Brunton, George .	Hillary Mount, Woodhouse Lane.
14	Corson, George .	Wood Lane, Headingley.
41	Crossley, John Edward .	Highfield House, Headingley.
33	Denison, Samuel .	32, Clarendon Road.
16	Denny, T. G. .	
32	*Dixon, A. S. .	
65	Eddison, Octavius, B.A. .	St. Helen's, Adel.
20	Eddison, Robert William .	The Manor, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William .	
69	Fraser, James B. .	8, Park Square.
24	Gascoigne, F. C. Trench .	Parlington Park, nr. Garforth.
25	Goodman, Prof. John .	The Yorkshire College.
35	Grahl, Conrad E. .	Ashwood, Headingley.
12	Hadow, Reginald T. .	
42	Hannam, S. J. W. .	44, Bank Street.
27	*Hargrave, John .	
60	Harland, J. W. .	Headingley.
28	Hepper, John .	Clareville, Headingley.
30	Hobson, Alfred .	8, Ladywood Villas, Roundhay.
80	*Holmes, Joseph .	
81	*Holroyd, James .	
31	Illingworth, William .	Flower Bank, Burley, Leeds.
6	Jackson, Richard .	Beech Villa, Cardigan Road.
34	Jackson, Rt. Hon. W. L., M.P. .	Allerton Hall, Leeds.
67	Jefferson, Robert P. .	26, Spencer Place.
63	*Jowitt, Miss E. M. .	

38	*Lawson, Thomas .	
39	*Lawson, John .	
23	Lupton, Prof. Arnold .	6, De Grey Road.
44	McCheane, Miss .	Moor Cottage, Adel.
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch (P).	Moorland Terrace.
9	Mathers, John Shackleton.	Hanover House, Leeds.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	*Morley, R. B. .	
49	*Myers, W. C. .	
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Springwell House, Sandal, Wakefield.
58	Nicol, W. H. .	12A, Clarendon Road.
51	*Nunneley, Thomas .	
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Bramley Grange, Thorner.
55	Nussey, Mrs. S. L. .	Potternewton Hall.
56	Nussey, Mrs. Peter .	Springville, Headingley.
43	Powolny, E. Adolph .	Hillary Place.
59	Ramsbotham, S. H., M.D. .	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	*Riley, H. W. .	
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	20, Call Lane.
68	*Smith, William Farrar .	
76	Smithells, Prof. A., B.Sc. .	North Grange Road.
37	Snowdon, Miss .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., M.A.	Rupert Lodge, Grove Road.
77	*Titley, Mrs. Anthony .	
78	Titley, John A.	Newton Hill, Leeds.
79	Tottie, Mrs. J. W. (P) .	
64	Tweedale, John .	12, South Parade.

82	Walker, H. B.	.
83	Ward, Edmund	. 19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S.	. Buckingham Ter., Headingley.
90	Ward, William (P)	. 12, Bank Street.
3	Webb, William Henry	. Aire Street.
85	Willson, J. J.	. Ballamona, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Albrecht, Horace	. Springwood Road, Roundhay.
Armistead, Edwin	. 39, Louis Street.
Atkinson, J. Cecil	. Wheatstone, Far Headingley.
Bakewell, William	. 38, Park Square.
Barran, Alfred	. Cumberland Road, Headingley.
Barran, Mrs.	. Weetwood.
Bartholomew, W. H., C.E.	. Ridge Way House.
Beaumont, Prof. R.	. 14, Regent Park Avenue.
Bedford, Charles S.	. Broomleigh, Chapel Lane.
Birch, Prof. De Burgh, M.D.	. 16, De Grey Terrace.
Booth, Alan L.	. Central Bank Chambers.
Braithwaite, Richard Hale	. Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	. Wynneholme, Far Headingley.
Briscoe, John Ed.	. 199, Roundhay Road.
Buckley, J. C.	. Longfield, Headingley.
Burrows, Rev. W. O.	. Clergy School, Leeds.
Butler, Edmund	. Kirkstall Forge.
Cameron, Dr. Spottiswoode	. Ridge Mount, Cliff Road.
Carpenter, T. A.	. Moor Cottage, Ilkley.
Carter, J. H.	. 26, Park Square.
Chorley, R.	. Cookridge Street.
Clark, Miss	. Potternewton.
Cliff, Walter	. Western Flatts, Wortley.
Cobb, J. W., B.Sc.	. 16, Ashville Avenue, Cardigan Rd.
Cohen, Dr. J. B.	. 15, Regent Park Avenue.

Connal, B. M., M.A.	13, Beech Grove Terrace.
Crampton, W. T.	Parcmont, Roundhay.
Cross, J. R.	Newlaithes Hall, Horsforth.
Croysdale, John	Westfield, Chapel-Allerton.
Dakin, H.	103, Caledonian Road.
Dalton, George	Regent Villas, Cumberland Rd.
Dickinson, Brow	Rosemont, Bramley.
Dodgshun, C. C.	Hyde Terrace.
Dodgson, Aquila	Southleigh, Headingley.
Elliot, Douglas	28, Bond Street.
Ellison, James Edward	10, De Grey Road.
Emmerson, Miss	Cromer Hall.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Gardner, Wilson	10, Norwood Terrace, Victoria Road, Headingley.
Gillespie, C. M., M.A.	The Yorkshire College.
Glover, Frederick, M.A.	16, De Grey Road.
Grant, Prof. Arthur J., M.A.	13, Cromer Terrace.
Green, John H.	Horbury, near Wakefield.
Green, William	1, Tanfield Place.
Haigh, Frederick	14, Monkbridge Rd., Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Harper, Alfred	Eccleshill, near Bradford.
Hartley, Prof. R. N., M.B.	38, Cookridge Street.
Hassé, A.	31, Commercial Street.
Hebblethwaite, Rhodes	5, Grosvenor Road, Headingley.
Hellier, J. B., M.D.	1, De Grey Terrace.
Hewetson, H. B., F.L.S.	9, Hanover Square.
Hindle, J. E.	10, Park Row.
Hirsch, Paul	Alma House, Headingley.
Holbrook, W.	St. Ann's Villas, Monkbridge Rd.
Jefferson, Miss M.	4, Woodhouse Square.
Josephy, Bernard	25, Hyde Terrace.

Josephy, Henry	5, Beech Grove Terrace.
Kirk, Albert E.	13, Bond Street.
Kitson, F. J.	Oatlands, Burley, Leeds.
Kitson, Sydney D.	12, East Parade.
Knight, Miss	Far Headingley.
Lawson, Arthur T.	Weetwood Grange, Far Headingley.
Lean, W. Scarnell, M.A.	7, Woodsley Terrace.
Littlewood, H., F.R.C.S.	Park Square.
Mackey, W. M., F.C.S.	Victoria Chambers, South Parade.
Manley, Miss	Cromer Hall, Leeds.
Matthews, Miss D.	Girls' High School, Leeds.
McLaren, John A.	31, Brudenell Mount.
Megson, Albert	Spencer Place, New Leeds.
Mozley, J. R., M.A.	1, Holly Bank, Far Headingley.
Murphy, Albert J.	Preston House, Tonbridge Street.
Naylor, J. W.	Allerton House, Chapeltown.
Newill, Frank	9, Kelso Road.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, John Carr	Moorfield House, Headingley.
Nixon, S. E.	St. Chad's Hill, Far Headingley.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Phillips, John Henry	Hazel House, Methley.
Pickert, Gustav	47, Beza Street, Hunslet.
Powell, William	4, Queen Square.
Richardson, W. W.	Cliff Road, Hyde Park.
Riley, Thomas	26, Grove Terrace, Leeds.
Robinson, Edmund	42, Park Square.
Rogers, Prof. L. J., M.A., Mus.Bac.	13, Beech Grove Terrace.
Sanders, T. W.	5, Blenheim Square.
Saville, H.	12, Granby Road, Headingley.
Scatcherd, Mrs. Oliver	Morley, near Leeds.

Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Sorsbie, Capt. R. F., R.E.	2nd W.Y.R.E. Vol., Claypit Lane.
Stables, Marshall	Hope Villa, Armley.
Stockdale, Mrs. T.	Spring Lea.
Stuhlmann, Mrs.	Cavendish House, Cavendish Rd.
Sykes, Arthur	Roundhay Grange.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Taylor, George Stamp	Beeston Hill.
Taylor, Mrs.	Buckingham House, Headingley.
Teale, Lionel H.	North Grange, Headingley.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Tiffany, Frank	11, Cliff Mount.
Wager, Harold, F.L.S.	Bank Villa, Stainbeck Lane.
Walker, Arthur T.	The Elms, Weetwood.
Walker, H. Secker, F.R.C.S.	Park Square.
Walker, James	Newton Park.
Walker, George	Do.
Whitmell, C. T., M.A., B.Sc.	Invermay, Headingley.
Wilkinson, J. J.	Burnside, Skipton.
Wilkinson, William	Surveyor, Altofts, Normanton.
Willans, J. W.	Mercury Office, Leeds.
Williamson, H. L.	4, St. Chad's Gardens, Far Headingley.
Wilson, D'Arcy B.	Seacroft.
Wood, Thomas	St. Mark's Terrace, Woodhouse Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Springwood Road, Roundhay.
Armistead, Mrs.	39, Louis Street, New Leeds.
Barran, Lady	Chapel-Allerton Hall.

Barran, Miss Ruth	Weetwood.
Barran, P. A.	Do.
Barran, J. N.	Do.
Beaumont, Mrs. R.	14, Regent Park Avenue.
Bedford, Mrs.	Woodhouse Cliff.
Bedford, Mrs. J. E.	Arncliffe, Shireoak Road.
Birch, Mrs.	16, De Grey Terrace.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	Wynneholme, Far Headingley.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brunton, Mrs.	Hillary Mount.
Brunton, Miss	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Cameron, Mrs.	Ridge Mount, Cliff Road.
Carter, Mrs. J. H.	26, Park Square.
Cohen, Mrs. J. B.	15, Regent Park Avenue.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Charles	Do.
Crawford, Mrs. J. W.	Newton Lane.
Cross, Mrs. J. R.	Newlaithes Hall, Horsforth.
Croysdale, Mrs. J.	Westfield, Chapel-Allerton.
Croysdale, Miss	Do. do.
Croysdale, John H.	Do. do.
Dalton, Mrs. G.	Regent Villas, Headingley.
Dodgshun, Mrs. C. C.	22, Springfield Mount.
Dodgson, Mrs.	Southleigh, Headingley.
Eddison, Miss E. A.	The Manor, Adel.
Ellison, Miss	10, De Grey Road.
Gardner, Mrs. Wilson	10, Norwood Terrace, Victoria Road, Headingley.
Glover, Miss	16, De Grey Road.
Glover, Miss Mary	Do.
Green, Miss	1, Tanfield Place.

Green, Miss Ethel	1, Tanfield Place.
Haigh, Miss	14, Monkbridge Road, Headingley.
Haigh, Miss Emily	Do. do.
Hallilay, Mrs.	28 Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hebblethwaite, Mrs.	5, Grosvenor Road, Headingley.
Hellier, Mrs.	1, De Grey Terrace.
Hepper, Mrs.	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hirsch, Mrs. Paul	Alma House, Headingley.
Hirsch, Miss	Do.
Holbrook, Mrs.	St. Ann's Villas, Monkbridge Rd.
Illingworth, G. N.	Flower Bank, Burley.
Jackson, Miss	Allerton Hall, Leeds.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Miss B.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, Hermann	Do.
Kitson, Mrs. F. J.	Oatlands, Burley, Leeds.
Lean, Miss	7, Woodsley Terrace.
Lupton, Mrs. Arnold	6, De Grey Road.
Mathers, Miss	Hanover House.
Myers, Miss	Cavendish House, Cavendish Rd.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Newill, Miss	9, Kelso Road.
Nicholson, Miss	Moorfield House, Headingley.
Nicholson, Wilfred E.	Do. do.
Nixon, Mrs. S. E.	St. Chad's Hill, Far Headingley.
Nussey, Miss	Potternewton Hall.
Nussey, Miss M.	Springville, Shaw Lane.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss	Cavendish House, Cavendish Rd.

Phillips, Miss Dorothy	Hazel House, Methley.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	Cliff Road.
Ryder, Miss E. I.	Gledhow Hill.
Ryder, Miss Louisa	Do.
Saville, Miss S. E.	12, Granby Road, Headingley.
Scattergood, Miss	41, Park Square.
Slade, Mrs. R.	14, Springfield Mount.
Slade, R. H.	Do.
Somers, Mrs.	48, Woodhouse Lane.
Stables, Mrs. Marshall	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Miss Enid	Spring Lea, Springfield Mount.
Stockdale, Miss M. B.	Do. do.
Stroud, Mrs. W.	Rupert Lodge, Grove Road.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Taylor, Mrs. G. S.	Beeston Hill.
Taylor, Miss	Do.
Taylor, Miss	Buckingham House, Headingley.
Taylor, T. L.	Do. do.
Teale, Miss	North Grange, Headingley.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thornley, Miss	c/o Mr. Illingworth, Flower Bank.
Tiffany, Mrs. Frank	11, Cliff Mount.
Wager, Mrs.	Bank Villa, Chapel-Allerton.
Walker, Mrs. A. T.	The Elms, Weetwood.
Walker, Miss	Park Square.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.

Ward, Mrs. G.	. Buckingham Terrace.
Williamson, Mrs. H. L.	. 4, St. Chad's Gardens, Far Headingley.
Willson, Miss Emilie Dorothy	. Ballamona, Headingley.
Willson, Miss Margaret	. Do.
Wood, Miss	. St. Mark's Terrace, Woodhouse Lane.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

Sir Frederick J. Bramwell, Bart., F.R.S., M.Inst.C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S.

Wm. Hartley, Durban, Port Natal.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

The Right Hon. Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Sir Clements R. Markham, K.C.B., F.R.S., F.L.S., Pres. R.G.S., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

C. C. Oxley, Minster House, Ripon.

Sir T. Wemyss Reid, LL.D., 26, Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., 19, Gledhow Gardens, London.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

Prof. T. E. Thorpe, Ph.D., D.Sc., F.R.S., Somerset House, London.

Edward Harry Woods, Rosario, Argentine Republic.

JOWETT & SOWRY, Printers and Lithographers, Albion Street, Leeds.

May 27, 1931

LEEDS

Philosophical and Literary Society.

THE 79th ANNUAL REPORT

(For 1898-9).

cc4

THE

SEVENTY-NINTH REPORT

OF

THE COUNCIL

OF THE

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY,

AT THE CLOSE OF THE SESSION 1898-9.

READ AT THE ANNUAL MEETING, MAY 3rd, 1899.

LEEDS:
JOWETT & SOWRY, PRINTERS AND LITHOGRAPHERS, ALBION STREET.
1899.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE END OF THE

SEVENTY-NINTH SESSION.

The Council are pleased to report that the use of the Museum appears to be growing among students, and that in other respects the Society maintains its position among the literary and scientific agencies of the City. They regret, however, to notice that the slight increase in the number of Members and Subscribers which occurred in the previous year has been lost during the past twelve months, and that the roll of the Society now contains 28 names less than last year. They are comprised in the following classes:—

	1898.	1899.
Original Proprietary Members	58	60
New Proprietary Members	82	79
Ordinary Members	2	2
New Ordinary Members	61	61
Annual Subscribers of £1 1s.	124	110
Annual Subscribers of 7s. 6d.	114	101
	441	413

The thanks of the Society are due to the President, Professor Rücker, Mr. Milnes Gaskell, and Dr. Moorman for valuable lectures delivered gratuitously during the past Session.

The full Lecture list was as follows:—

1.—"An Ancient House of Healing." By THE PRESIDENT. *Oct. 18th, 1898.*

2.—"The Historical Origin of Sir John Falstaff." By Rev. CANON AINGER, D.D. *Nov. 1st, 1898.*

3.—"Musical Concord and Discord." By Professor A. W. RÜCKER, D.Sc., Sec.R.S. *Nov. 15th, 1898.*

4.—"A Study of Splashes, by means of Instantaneous Photography." By Professor A. M. WORTHINGTON, M.A., F.R.S. *Dec. 6th, 1898.*

5.—"Old Musical Instruments," with Performances on a collection of Old Instruments. By ARNOLD DOLMETSCH. *Dec. 20th, 1898.*

6.—"Instinct and Intelligence in Animals." By Professor C. LLOYD MORGAN. *Jan. 10th, 1899.*

7.—"Municipal Government Seventy Years ago." By C. G. MILNES GASKELL, M.A. *Jan. 17th, 1899.*

8.—"The Progress of Geography; (*a*) The Great Globe, (*b*) The Outlook Tower." By Professor PATRICK GEDDES, F.R.S.E. *Feb. 7th, 1899.*

9.—"Lord Chesterfield." By Professor W. A. RALEIGH, M.A. *Feb. 21st, 1899.*

10.—"Sea-water Animals of Celebes." By Professor SYDNEY J. HICKSON, D.Sc., F.R.S. *March 7th, 1899.*

11.—"Ethical Problems of Shakspeare's Tragedies." By F. W. MOORMAN, Ph.D. *March 21st, 1899.*

12.—"Christmas Island; its Structure and Natural History." By CHARLES W. ANDREWS, F.G.S. *April 11th, 1899.*

Although some of these lectures were of unusual interest, the attendance was, on the average, below that of recent years.

Attention has been given during the year to the ventilation of the Lecture Hall, and some important improvements, which have not yet been completed, have been taken in hand.

The lighting by electricity has also been improved, though it is feared that the annual cost will prove to be much beyond what was contemplated when consent was given to the alterations proposed by the City Corporation, which supplies the current.

It is gratifying to note from the financial statement that, in addition to providing for the current expenses, the income sufficed to pay off most of the debt of £43 owing to the Bank at the beginning of the year. The balance due to the Bank is now £3.

Increasing reference is being made to the Museum Collections by undergraduates of the Victoria University, by specialists in lepidoptera and mollusca, and by school teachers and students preparing for science examinations. Several visits have been made by children from schools outside the City, under the guidance of their masters, and there has been a marked appreciation of the Museum by the teachers of the Leeds Board Schools.

The additions by gifts to the Museum during the past year include a small series of uncommon fossil coal plants from the Barnsley Coal Measures, by Mr. William Hemingway, of Barnsley, and another of more familiar forms, but in a beautiful state of preservation, collected from the Brown Metal Seams of the Coal Measures, exposed in the making of the Gildersome Tunnel by the donor, Mr. William Hiscoe, of Gelderd Road, Leeds.

A collection of fossils from the Carboniferous Limestone of Craven has been acquired by purchase.

Three varieties of the Golden Pheasant, presented by Mr. J. W. Marsden, Avenue House, Leeds, Mr. John Waite, Headingley, and Mr. J. T. Pollard, Chapeltown, have been grouped in the Bird Room, to illustrate some of the marked contrasts in plumage colours which these birds may assume. One example is that of a female bird which has partially acquired the characteristic plumage of a male bird.

The Egyptian objects in the Museum have been re-arranged in cases in the Inner Vestibule, and so displayed that even the smallest of them may be fully examined. The Council have had these cases specially fitted with the electric light so that the increasing class of visitors who are interested in Egyptian antiquities may have greater facilities for studying them.

A small collection of Peruvian pottery has been deposited on loan, in the Museum, by Mr. C. W. Hodgson, of Johannesburg. Like the collection which the Society already possesses, in black ware, the objects are moulded in the form of grotesque figures of men, birds, &c., but the body of the ware is yellow, coloured and ornamented with a red pigment.

The past year has also seen the initiation of a new arrangement of the plants of the Coal Period, of which the Society possesses a good local collection. The specimens have been named, and it is proposed during the coming year to group the various forms under the classes to which they belong, so that students of Palæobotany may find them helpful in their determination of the fossil plants of the district.

Great interest has been taken by visitors in those cases in the Museum which are specially set apart for the display of injurious insects, attack and defence among animals, and the morphology and eggs of birds.

The thanks of the Society are due to the Trustees of the British Museum, of the Smithsonian Institute, and other learned Societies, for their continued generous donations to the library. Lord Armstrong, C.B., F.R.S., has kindly presented copies of his work on "Electric Movement in Air and Water," and the "Supplement" to the same work. There has been a marked increase of the use of the library for reference purposes, and more books than usual have been borrowed.

The past year has also seen the housing of the Leeds Photographic Society in the building. Accommodation has been provided for their books, pictures, and apparatus, and the Council is pleased to learn that the change has been advantageous to them.

Through the kindness of Mr. Reginald Wigram, Oakfield, Kirkstall, who lent his collection of relics from the battlefield of Omdurman, visitors to the Museum had an opportunity during the month of March of seeing displayed in the rooms the many curious objects Mr. Wigram and his friends have acquired from the Soudan. The collection included swords, many of which were engraved, guns, daggers in unique mountings, spears, shields, articles of dress, and musical instruments.

The number of visitors to the Museum during the year was 24,514.

The Council regret to announce the death of one of the Honorary Members of the Society, the Rev. Thos. Hincks, B.A., F.R.S. Mr. Hincks, who was Minister of Mill Hill Chapel, became a member of the Council of the Leeds Philosophical and Literary Society in 1857, and Curator of Zoology in 1858, which office he held for ten years, resigning it on account of failing health. He was Vice-President in 1861 and 1862, and President in the three succeeding years. He rendered useful service to the Society, not only in the tenure of these several offices, but also by the delivery of lectures on his special branch of science. On his retirement in 1869 he was elected an Honorary Member of the Society. Mr. Hincks took rank among the best Zoologists of his generation. His two great works, "The British Hydroid Zoophytes," and "The British Marine Polyzoa," are of first-rate reputation, being known and quoted throughout the world. His accuracy in description was universally recognised, and he spared no pains to make himself intimately acquainted with fresh, and, if possible, living examples of the animals which he described. Mr. Hincks will be long remembered with honour by students of Natural History.

Summary of Meteorological Observations taken at the Philosophical Hall, and at Woodhouse Cliff, Leeds, during the year 1898.

1898.	Mean Height of Barometer (inches).	Mean Temperature of Air (degrees).	Mean Temperature of Earth (degrees).	Amount of Rainfall.	
				Museum (inches).	Woodhouse Cliff (inches).
January	29·998	45·2	41·9	·66	·85
February...	29·620	41·1	40·8	1·39	1·61
March	29·660	40·4	39·4	·78	·79
April	29·621	47·5	43·1	2·62	2·57
May...	29·590	49·4	47·1	1·81	1·61
June...	29·724	56·7	52·5	2·43	1·50
July	29·849	60·4	56·2	·84	·81
August	29·740	62·3	56·9	3·23	3·25
September	29·835	59·9	55·7	·31	·39
October	29·591	53·0	51·4	3·50	3·62
November	29·578	45·6	47·6	1·76	2·22
December	29·641	45·4	43·2	2·13	2·43
Yearly Means ...	29·703	50·5	48·0	21·46	21·55

EXTREMES FOR THE YEAR.

Greatest Barometric pressure—30·45 inches on January 15th, the Temperature of the Mercury being 50° F.; Least pressure—28·72 on November 25th, the Temperature of the Mercury being 47°.

Greatest degree of Heat, indicated by the Thermometer in the shade—85° on September 17th; minimum—25° on November 23rd.

Lowest Earth Temperature was 37·8° on March 9th, 10th, 11th, and 12th; the Highest 58·4° on August 23rd and 24th.

Greatest fall of Rain (during 24 hours)—1·18 inches on June 26th. Average yearly Rainfall at the Museum for the ten years 1889—1897, 25·42 inches.

RELATIVE SUNSHINE AT THE URBAN AND RURAL STATIONS, THE MUSEUM AND ADEL.

Deficiency of Museum from Adel:—

1887-88	24·0 per cent.	1893-94	20·0 per cent.
1889-90	33·4 ,,	1895-96	19·3 ,,
1891-92	30·5 ,,	1897-98	18·7 ,,

The Sunshine of 1897, taken by itself, showed a deficiency of only 16·5 per cent.; this is considered attributable to the great Engineering Strike, which led to the closing of many of the workshops of the City for seven months.

The adopted Mean Temperature of the Air is the mean of the following four daily readings:—(*a.* and *b.*) Dry Bulb Thermometer read at 10 a.m. and 4 p.m.; (*c.* and *d.*) Maximum and Minimum Thermometers, in a screen.

The Readings of the Earth Thermometer are taken by a Symons' instrument, exposed at a depth of 2 feet 6 inches below the ground at Woodhouse Cliff, and read at 10 a.m. The monthly returns are the means of the daily readings.

The Hall is situated at 1° 32′ 45″ W., and 53° 47′ 51″ N.

The Bench Mark at the corner of the Philosophical Hall is 131·8 feet above sea level, and 10 inches above the pavement. The Cistern of the Barometer is 12·8 feet, the Thermometers are 42 feet, and the Rain-gauge is 45 feet above the Bench Mark.

SUNSHINE AT LEEDS IN 1898.

The observations recorded below were made by Jordan's Photographic Sunshine Recorder at the following stations in Leeds:—

1. The Museum of the Philosophical and Literary Society, situate in the centre of the city; elevation above the sea, 145 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the city; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the city; elevation, 475 feet; on the fringe of the city.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible Duration.
JANUARY	1	11·40	4·84
	2	13·20	5·35
	3	10·50	4·49
FEBRUARY	1	62·30	23·40
	2	74·15	27·80
	3	91·00	34·00
MARCH	1	83·25	22·91
	2	110·55	30·47
	3	120·40	33·14
APRIL	1	95·45	22·90
	2	107·45	25·77
	3	117·45	28·17
MAY	1	115·40	23·50
	2	132·05	26·84
	3	140·00	28·55
JUNE	1	150·50	29·80
	2	170·40	33·72
	3	170·55	33·77
JULY	1	202·35	40·03
	2	221·10	43·70
	3	232·45	46·00
AUGUST	1	148·35	32·65
	2	161·40	35·53
	3	168·30	37·03
SEPTEMBER	1	115·20	30·83
	2	118·05	31·57
	3	132·55	35·53
OCTOBER	1	59·35	18·62
	2	69·20	21·66
	3	81·05	25·33
NOVEMBER	1	23·00	9·23
	2	37·00	14·85
	3	39·40	15·93
DECEMBER	1	17·55	8·07
	2	31·45	14·30
	3	43·00	19·30

SUMMARY FOR THE YEAR.

	Hours recorded. H.	M.	Difference from mean of ten years in hours. H.	M.	Percentage of possible duration.
Museum ..	1,086	50	+22	02	24·62
Woodhouse Cliff	1,248	00	−14	42	28·72
Lawnswood ..	1,349	05	−45	37	30·56

27·8	per cent. mean for	1898.	31·6	per cent. mean for	1893.
31·4	,, ,,	1897.	27·5	,, ,,	1892.
26·5	,, ,,	1896.	22·2	,, ,,	1891.
37·5	,, ,,	1895.	24·4	,, ,,	1890.
29·0	,, ,,	1894.	20·7	,, ,,	1889.

or 27·8 per cent. mean for ten years.

The Meteorological Office publishes the following records of sunshine for 1898, as observed at stations taken as representing specified districts:—

Stations.	Number of Hours.	Difference from mean.	Percentage of possible duration.
Scotland, N. (Stornoway, &c.)	1,230	+169	28
,, E. (Aberdeen, Marchmont)	1,314	+ 39	30
,, W. (Glasgow; Douglas, Isle of Man) ..	1,320	+ 2	30
England, N.E. (Durham, York)	1,237	− 18	29
,, N.W. (Stonyhurst, Blackpool, Llandudno)	1,432	+113	33
,, Mid. (Cirencester, Oxford, &c.)	1,387	+ 36	32
,, S. (London, Hastings, Southampton, &c.)	1,535	− 17	36
,, E. (Hillingdon, Geldestone, Cambridge)	1,556	− 2	35
,, S.W. (Pembroke, Falmouth, Plymouth, &c.)	1,698	+ 49	39
Ireland, N. (Armagh, Markree Castle)	1,296	+ 29	29
,, S. (Dublin, Parsonstown, Valencia) ..	1,486	+ 43	34
Channel Islands (Jersey)	1,968	+129	46

SUMMARY.

33·5	per cent. mean for United Kingdom,	1898.	37·0	per cent. mean for United Kingdom,	1893.
34·1	,, ,, ,,	1897.	35·2	,, ,, ,,	1892.
31·8	,, ,, ,,	1896.	32·6	,, ,, ,,	1891.
35·8	,, ,, ,,	1895.	30·7	,, ,, ,,	1890.
31·1	,, ,, ,,	1894.	29·2	,, ,, ,,	1889.

or 33·10 per cent. mean for ten years.

LIST OF PRESIDENTS

SINCE

THE FOUNDATION OF THE SOCIETY.

1821—5.	JOHN MARSHALL.
1826 & 7.	Rev. W. H. BATHURST, M.A.
1828—30.	MICHAEL THOS. SADLER, M.P.
1831 & 2.	WILLIAM HEY.
1833 & 4.	JAMES WILLIAMSON, M.D.
1835 & 6.	Rev. JOSEPH HOLMES, M.A.
1837—9.	Rev. RICHARD WINTER HAMILTON.
1840 & 1.	ADAM HUNTER, M.D.
1842—4.	JOHN HOPE SHAW.
1845—50.	Rev. WILLIAM SINCLAIR, M.A.
1851.	WILLIAM WEST, F.R.S.
1852 & 3.	Rev. CHARLES WICKSTEED, B.D.
1854—6.	JOHN HOPE SHAW.
1857.	JAMES GARTH MARSHALL, F.G.S.
1858.	Rev. W. F. HOOK, D.D.
1859 & 60.	Rev. ALFRED BARRY, M.A.
1861 & 2.	THOS. PRIDGIN TEALE, F.R.S.
1863—5.	Rev. THOS. HINCKS, B.A.
1866 & 7.	CHARLES CHADWICK, M.D.
1868—71.	JOHN DEAKIN HEATON, M.D.
1872 & 3.	Rev. CANON WOODFORD, D.D.
1874 & 5.	J. I. IKIN, F.R.C.S.
1876 & 7.	Rev. J. H. MCCHEANE, M.A.
1878—80.	T. CLIFFORD ALLBUTT, M.D., F.L.S.
1881 & 2.	Rev. JOHN GOTT, D.D.
1883 & 4.	J. E. EDDISON, M.D.
1885.	EDWARD ATKINSON, F.L.S.
1886—8.	THOMAS MARSHALL, M.A.
1889—91.	THOS. PRIDGIN TEALE, M.A., F.R.S.
1892 & 3.	Rev. J. H. D. MATTHEWS, M.A.
1894 & 5.	Rev. CHARLES HARGROVE, M.A.
1896 & 7.	EDMUND WILSON.
1898 & 9.	NATHAN BODINGTON, M.A., Litt.D.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the year 1898-9.

RECEIPTS.	£ s. d.	£ s. d.
To Balance in hand, May 1st, 1898	—	0 19 7
,, Annual Subscriptions, viz.:—		
72 New Proprietary Members, at 21s. ...	75 12 0	
2 Original Ordinary ,, 42s. ...	4 4 0	
53 New Ordinary ,, 21s. ...	55 13 0	
108 Annual Subscribers, at 21s.	113 8 0	
102 Annual Subscribers, at 7s. 6d. ...	38 5 0	
		287 2 0
,, Rent, viz.:—		
Cellars	40 0 0	
Lecture Room	219 12 6	
		259 12 6
,, Receipts from Visitors to Museum ...		102 2 10
,, Sale of Catalogues and Guides	3 15 4	
,, Midland Railway Dividend	54 17 2	
,, Sundries	3 0 6	
		61 13 0
,, Sale of Forfeited Share		5 0 0
,, Balance due to Bank		3 6 1
		£719 16 0

PAYMENTS	£ s. d.	£ s. d
By Balance Due to Bank, May 1st, 1898 ...	—	43 12 11
,, Repairs and Alterations	56 7 1	
,, Rates and Taxes	20 13 10	
,, Fire Insurance	12 10 0	
,, Coals, &c.	17 1 11	
,, Gas and Water	22 12 2	
,, Cleaning	8 15 10	
		138 0 10
,, Salaries and Wages	304 18 0	
,, Fee to Auditors	2 2 0	
		307 0 0
,, Collections, Library, and Scientific Apparatus		38 12 9
,, Postages	10 5 11	
,, Advertising and Printing	35 14 0	
,, Lectures	114 19 10	
,, Bank Commission	1 1 0	
,, Sundries	18 17 2	
		180 17 11
,, Electric Light Supply	... ...	10 11 7
,, Balance in hand	... ...	1 0 0
		£719 16 0

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

BEEVERS & ADGIE,
CHARTERED ACCOUNTANTS.

LEEDS, *May 12th, 1899.*

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1898-9.

ZOOLOGY.

Nightjar (*Caprimulgus europæus*)	Mr. F. Wright, Albion Walk, Leeds.
Lady Amherst Pheasant (*Chrysolophus amherstiæ*) ..... Purple Gallinule (*Porphyrio cæruleus*)	Mr. J. W. Marsden, Avenue House, Leeds.
Lady Amherst Pheasant (*Chrysolophus amherstiæ*) female assuming male plumage	Mr. John Waite, Headingley.
Snakes in Spirit	Mr. Smith Holmes, 11, Cowper St., Chapeltown.
Skin of Secretary Vulture (*Serpentarius secretarius*) from S. Africa	Mrs. Campbell, Bennett Road, Headingley.

GEOLOGY.

A series of Coal Measure Fossils, including *Cordaites principalis; Bothrodendron minutifolium; Diplothmemma Jacquotii; Renaultia Footneri; Artisia transversa*, from the Barnsley District.....	Mr. Wm. Hemingway, Barnsley.

A small series of Coal Measure Fossils from the Brown Metal Beds, exposed in making the Gildersome Tunnel, Beeston Royds, including *Sphenopteris*, *Alethopteris lonchitica*, *Calamostachys*, *Stigmaria*, *&c.*	Mr. Wm. Hiscoe, Gelderd Road, Leeds.
Small collection of Mountain Limestone Fossils.....	Purchased.
Specimens of *Axinus obscurus*, from the Magnesium Limestone, Micklefield	Mr. Dixon Wilby, East View, Crossgates.

ARCHÆOLOGY.

Mosaic tiles from Rome and Baiæ; Tiles from the Abbeys of Rievaulx and Fountains.....	Mr. Alfred Birtwhistle, Otley Road, Skipton.

PUBLICATIONS.

Catalogue of Welwitsch's African Plants, Parts II. & III. ..... List of the Types and Figured Specimens of Fossil Cephalopoda... Catalogue of the Lepidoptera Phalænæ ..... Catalogue of the Syntomidæ, text ... Catalogue of the Syntomidæ, coloured plates ..... Catalogue of the Birds, Vol. XXVI....	The Trustees of the British Museum.
Electric Movement in Air and Water, with Theoretical Inferences ..... Electric Movement in Air and Water, Supplement	The Author, Lord Armstrong, C.B., F.R.S.
Maps and Plans of Jerusalem	Mr. Edwd. Atkinson, F.L.S.
Session Booke of Bonckle, from 1684 to 1694	The Berwickshire Naturalists' Club.
On the Water Supplies of Yorkshire (pamphlet)	The Author, Mr. Thos. Fairley, F.R.S.E.
Science of Man and Australasian Anthropological Journal	The Publishers, Sydney.

PERIODICALS.

WEEKLY.

Nature	Purchased.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	Purchased.
Journal of the Chemical Society	Purchased.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.
Journal of the Linnean Society	Mr. Edward Atkinson, F.L.S.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions	Purchased.
Proceedings of the Royal Society	The Society.
Proceedings of the Royal Institution of Great Britain	The Institution.
Publications of the Ray Society	Purchased.

Abridgments of Specifications for Patents, Period 1884—88; 1889—92	The Comptroller-General of Patents.
British Association Report.....	The Association.
Greenwich Observations.....	The Astronomer-Royal.
Memoirs of the Royal Astronomical Society	The Society.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall, 1897	Purchased.
Monograph of the Palæontographical Society	Purchased.
Proceedings of the Yorkshire Geological and Polytechnic Society.....	The Society.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Liverpool Geological Society.....	The Society.
Journal of the Liverpool Geological Association	The Association.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne.....	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society	The Society.
Report of the Committee of Leicester Town Museum	The Museum.
Report of the Royal Institution, Hull	The Institution.
Report of the Meteorological Department of the Borough of Southport.	The Meteorological Observer.
Report of the Bristol Museum	The Museum Committee.
Report of the Reading Museum	The Free Library and Museum Committee.
Annual Report of the Brighton Town Museum	The Museum.
Annual Report, Middlesex Hospital...	The Hospital.

Annual Report of the Birkenhead Literary and Scientific Society	The Society.
Proceedings of the Liverpool Literary and Philosophical Society	The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association	The Association.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society	The Society.
Transactions of the Manchester Geological Society	The Society.
Reports of the Manchester Museum Handbooks do. do.	The Keeper.
Annual Report of the Sheffield Literary and Philosophical Society	The Society.
Annual Report of the Chester Society of Natural Science and Literature	The Society.
Transactions of the Leeds Naturalists' Club and Scientific Association.....	The Association.
Journal of the Royal Institution of Cornwall	The Institution.
Annual Report of the Royal Cornwall Polytechnic Society.....	The Society.
Report of Associated Architectural Societies	The Association.
Journal of the Chester Archæological and Historic Society	The Society.
Geological Record	Purchased.
Transactions of the Yorkshire Naturalists' Union	The Union.
Proceedings of the Royal Society of Edinburgh ..... Transactions do. do.	The Society.
Transactions of the Edinburgh Geological Society.....	The Society.
Proceedings of the Glasgow Philosophical Society	The Society.
Proceedings of the Berwickshire Naturalists' Club	The Club.

Scientific Proceedings of the Royal Dublin Society Scientific Transactions do.	The Society.
Transactions of the Royal Irish Academy Proceedings do. do.	The Academy.
Journal of the Royal Geological Society of Ireland	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	The Club.
Publications of the Royal Swedish Academy of Sciences	The Academy.
Papers of the Royal University of Norway	The University.
Bulletin of the Geological Institution of the University of Upsala	The Institution.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger	Royal Danish Society of Sciences.
Bulletin, Société Impériale, Moscow...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deutschen Akademie der Naturforscher	The Academy.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien	The Society.
Memoirs of the National Academy of Sciences	The Academy.
Report of Australasian Association for the Advancement of Science	The Association.
Journal and Proceedings of the Royal Society of New South Wales	The Society.
Journal of the Royal Geographical Society of Australasia	The Society.
Wealth and Progress of New South Wales	The Agent-General.
Records of the Geological Survey of New South Wales Memoirs of the Geological Survey of New South Wales	The Surveyor.

Annual Report and Papers of the Department of Mines and Agriculture, New South Wales	The Department.
Prodromus of the Zoology of Victoria	The Editor.
Records of the Australian Museum Report of the Trustees of the Australian Museum.....	The Trustees.
Proceedings of the Royal Society of Queensland	The Society.
Queensland Agricultural Journal	The Society.
Annals of the Queensland Museum...	The Trustees.
Transactions and Proceedings of the New Zealand Institute	The Institute.
Papers and Proceedings of the Royal Society of Tasmania	The Society.
Proceedings and Transactions of the Royal Society of Canada	The Society.
Proceedings of the Canadian Institute Annual Report do. Transactions do.	The Institute.
Proceedings and Transactions of the Nova Scotian Institute of Natural Science	The Institute.
Annual Report, Hamilton Public Library, Ontario, Canada	The Librarian.
Journal and Proceedings of the Hamilton Association	The Association.
Geological and Natural History Survey of Canada ..... Annual Report and Papers—do. ..... Contributions to Canadian Palæontology	Department of the Interior
Bulletin of the Natural History Society of New Brunswick.....	The Society.
Memorias de la Sociedad Científica (Mexico)	The Society.
" Boletin Mensual " Observatorio Meteorologico-Magnetico Central de Mexico	The Editor.
Annuario del Observations Astrónomico Nacional, Mexico.....	The Astronomer.

Boletin del Observatorio Astronómico Nacional de Tacubaya	The Observer.
Report of the Museum National, Rio-de-Janeiro.....	Directeur-Général.
Archivos do.	
Cape Meridian Observations	Cape Astronomer-Royal.
Report of H.M. Astronomer at the Cape of Good Hope to the Secretary of Admiralty	
Transactions of the American Philosophical Society	The Society.
Proceedings do.	
United States Geological Survey Annual Report.....	The Department.
Contributions to American Ethnology.	
United States Geographical and Geological Survey	
United States Department of Agriculture, Publications of	The Department.
Natural History of the Tres Marias Islands, Mexico	
Composition of Maize	
Cuckoos and Shrikes	
Geographic Distribution of Cereals of North America	
Life Zones and Crop Zones of the United States	
North American Bats of the Family Vespertilionidæ	
Report of the Smithsonian Institution	The Institution.
Smithsonian Miscellaneous Collections	
Smithsonian Contributions	
Annual Reports of the Bureau of Ethnology	
Miscellaneous Publications of the Bureau of Ethnology	
Proceedings of United States National Museum	The Museum.
Report do. do.	
Bulletins do. do.	
Transactions of the Academy of Science of St. Louis	The Academy.

Proceedings of the Academy of Natural Sciences of Philadelphia... Papers do. do.	The Academy.
Proceedings of the American Academy of Arts and Sciences.....	The Academy.
Transactions of the Wisconsin Academy of Sciences, Arts, and Letters	The Academy.
Memoirs of the National Academy of Sciences, Washington.....	The Academy.
Proceedings of the Davenport Academy of Natural Science.....	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia ...	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba	The Society.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science	The Union.
Proceedings of the Boston Society of Natural History, U.S.A. ..... Memoirs do.	The Society.
Bulletins of the Essex Institute, U.S.A.	The Institute.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College ..... Annual Report of Harvard College	The College.
Harvard University Catalogue	The University.
Annual Report of the Chicago Academy of Sciences.....	The Academy.
Transactions of the Astronomical Observatory of Yale University ... Annual Report do. Report of the President of Yale University ..... Catalogue do. do.	The University.
Journal of the Elisha Mitchell Scientific Society	The Society.
Tufts College Studies.....	The College.

Transactions of the Meriden Scientific Association	The Association
Transactions of the Botanical Society of America	The Society.
Bulletins of the Wisconsin Geological and Natural History Society.....	The Society

LIST OF OFFICERS AND COUNCIL,

1899-1900.

OFFICERS.

PRESIDENT	NATHAN BODINGTON, Litt.D
VICE-PRESIDENTS. .	EDMUND WILSON. J. H. WICKSTEED, M.Inst.C.E.
HONORARY SECRETARIES .	ARTHUR SMITHELLS, B.Sc. E. K. CLARK, M.A., M.Inst.C.E.
TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	J. A. NUNNELEY, M.B.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. LOUIS C. MIALL, F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. J. H. D. MATTHEWS, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

JAMES E. BEDFORD, F.G.S.	RICHARD REYNOLDS, F.I.C.
T. WALTER HARDING.	THOMAS SCATTERGOOD.
REV. CHAS. HARGROVE, M.A.	T. P. TEALE, M.A., F.R.S.
THOMAS MARSHALL, M.A.	J. J. WILLSON.
HENRY JOHN PALMER.	RICHARD WILSON.

Secretary . . .	W. F. HUSBAND, LL.B.
Curator . . .	HENRY CROWTHER, F.R.M.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1899-1900.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

3	Armitage, Robert	Farnley.
4	Arthington, Robert	Falmouth.
54	Bailey, Benson	14, Kelso Road.
49	Baines, Mrs. Arthur	The Heath, Adel.
5	*Baines, Herbert S.	
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, Sir John, Bart.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	*Binks, Benj., Junr.	
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	Broomfield Crescent, Headingley.
11	*Brown, James	
31, 62	Brown, Wm. J. (2 shares)	Burghwallis Hall, Doncaster.
13, 14	*Calverley, Edmd. (2 shares)	
15	Charlesworth, C. H.	6, Queensborough Terrace, Hyde Park, London, W.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	Greek Street.
26	Cousins, William James	Greek St. Chambers, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
28	Empson, Christopher	Mill Mount, York.
29, 48	Ford, J. R. (2 shares)	Quarrydene, Weetwood.

72	Gaunt, Leonard .	Hazelbrae, Farsley.
36-8	Gott, Wm. Henry (3 shares)	
61	Greenhow, Wm. T. .	NewtonCottage,Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
27	Hall, William .	Hillside, Headingley.
39	*Harding, T. R. .	
64	Harding, Thomas Walter .	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Regent Villas, Cumberland Rd.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	
30	Horsfall, J., M.A., F.R.C.S.	Cambray, Richmond Hill, Bournemouth E.
47	Ingham, John P. .	14, East Parade.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
43	Lancaster, William Thomas	Yorks. Banking Co. Ltd., Leeds.
55	Luccock, Mrs. .	TheLimes, Kirkstall Lane, Leeds.
34	Lumb, George Denison .	65, Albion Street.
57	Lupton, Charles, M.A. .	The Harehills, Roundhay.
32	Lupton, Edward Basil .	Moorlands, Headingley.
53	Lupton, Francis M., M.A.	Rockland, Newton Park.
56	Lupton, Sydney, M.A. .	A. Audley Mansions, 44, Mount Street, London, W.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	*Marshall, Arthur, F.G.S. .	
60	*Marshall, John, M.A. .	
66	Marshall, Reginald Dykes	Castlerigg Manor, Keswick.
67	Marshall, V. A. E., B.A. .	Monk Coniston, Ambleside.
50	Mason, Charles Letch .	The Hollies, Cliff Road.
65	Miall, Prof. Louis C., F.R.S.	8, Spring Road, Headingley.
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
17	Padgett, Frederick A. .	13, Cookridge Street.
46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
70	*Shepherd, John .	

10	Streatfeild, Richard James.	The Rocks, Uckfield, Sussex.
71	Tatham, Miss .	Springfield Mount.
52	*Taylor, Benjamin .	
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	
35	Truro, The Bishop of .	Trenython, Par Station, Cornwall.
75	Walker, Edward .	32, Springfield Mount.
76	Ward, William .	12, Bank Street.
2	Warde-Aldam, W. W. .	Frickley Hall, Doncaster.
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	Denison Hall.
33	Wilson, Henry B. .	Westfield, Armley.
69	Wood, William Hoffman .	Park Square.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S..	Langholme, Franklin Road, Harrogate.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	*Baines, Frederick .	
2	*Balme, E. B. Wheatley, M.A.	
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford .	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	2, East Parade.
13	Boothman, David .	Rough House, Headingley.
4	*Boothroyd, William .	
89	Boston, Richard .	Boar Lane.
10	Bowling, John .	Newstead House, Spencer Place.
49	Braithwaite, William .	Throstle Nest, Horsforth.
5, 6	Brown, G. W. (2 shares) .	78, Belsize Park Gardens, Hampstead, London.
37	Bulmer, Miss .	Blenheim Lodge.

1	Burrell, Benjamin A., F.I.C.	5, Mount Preston.
86	*Carter, J. B. .	
9	*Chadwick, William .	
77	Clark, Edwin Kitson, M.A.	9, Hyde Terrace.
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	9, Carlton Grove, Blackman Lane.
104	Crawford, John William .	Newton Lane.
26	Elliot, Douglas .	28, Bond Street.
19	Fairbairn, Sir Andrew .	Askham Grange, near York.
118	Flitch, John R. .	Moortown.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gibson, Rev. E. C. S., D.D.	Leeds Vicarage.
102-3, 106-10, 114-15	Gott, William Henry (P) (9 shares) .	
22	Hargrave, Charles .	
23	*Hargrave, James .	
7	Hargrove, Rev. C., M.A. .	10, De Grey Terrace.
16	Harvey, William .	The Grove, Roundhay.
81	Hatch, S. C. .	
44	Hepper, Mrs. J. H. .	Greenside, Wortley.
51	Hoggard, Alfred .	25, Cavendish Road.
98	Howgate, William .	21, Blenheim Terrace.
36	*Hudson, Henry .	
84	Hummel, Prof. J. J. .	152, Woodsley Road.
120	Ingham, Samuel .	Headingley Hall.
56	James, Christopher William	Old Manor House, Potternewton.
96	*Jepson, Edward George .	
39	Jowitt, Robert Benson .	Harehills, Leeds.
40	Joy, William Lomas .	Brentwood, Beverley.
43	*Kitson, James .	
46	*Kitson, J. Hawthorn .	
47	Kitson, Sir Jas., Bart., M.P.	Gledhow Hall.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.
90	Lawson, Frederick W. .	Oaklands, Adel.

50	Leather, Ernest Arthur .	
53	*Lupton, Mrs. Arthur .	
95	Lupton, Arthur Greenhow	Wellington Street.
8	Lupton, Henry .	Lyndhurst, Headingley.
99	Lupton, Hugh .	Mount Pleasant, Leeds.
54	*Lupton, Joseph .	
55	Lupton, Mrs. John .	Moorlands, Headingley.
21	Lupton, Oliver .	Shireoak Road, Headingley.
63, 100	Lupton, Fras. Martineau, M.A. (P) (2 shares) .	Rockland, Newton Park.
88	*McGuire, Thomas .	
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Regent Villas, Cumberland Road.
60	Marshall, Thomas, M.A. .	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D. .	Grammar School, Leeds.
27	Maude, William Henry .	Middleton Lodge, Leeds.
117	Middleton, Arthur .	Calverley Chambers, Victoria Sq.
33	Muir, James .	South Haven, Beach Road, Weston-super-Mare.
66	Nicholson, A. H. .	
30	Nicholson, Marshall .	Middleton Hall, near Leeds.
64	*Nickols, Richard .	
67	Nunneley, A. G. .	Wanstead House, Burley, Leeds.
68	Oxley, James Walker .	31, Park Row.
93	Palmer, Henry John .	55, Albion Street.
28	*Passavant, P. W. .	
82	Pearson, John Thomas .	The Hall, Melmerby, S.O.
11	Price, Mrs. William N. .	Hillary Place.
38	*Ralph, John, M.A. .	
34	*Ransome, Prof. Cyril, M.A.	
69	Reynolds, Richard, F.I.C. .	Cliff Lodge, Hyde Park.
72	Rider, James .	8, Beech Grove Terrace.
18	Robson, A.W. M., F.R.C.S.	Moor Road, Headingley.
105	Ryder, Charles .	Gledhow Hill.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.

119	Schunck, John Edward .	Potternewton House.
57	Stringer, John William .	Inglebank, Far Headingley.
73	Teale, T. P., M.A., F.R.S. .	North Grange, Headingley.
74	Teasdale, Washington, F.R.A.S. .	Headingley.
76	*Tennant, Thomas .	
78	*Tetley, F. W. .	
58	Thompson, Chas. F. .	Rowangarth, Ben Rhydding.
79	*Turner, Richard B. .	
80	Wailes, William .	2, Albion Place.
71	Ward, John .	Moor-Allerton House.
111	*Watson, William Henry .	
41	Webb, Joseph S. .	26, Park Row.
97	Weston, Edward .	Newton Park Villa, New Leeds.
42	Whiting, John .	Cliff Road.
83	Wicksteed, J.H., M.Inst.C.E.	Weetwood Croft, Far Headingley.
31	Wilkinson, William M. .	220, Newton Hill.
85	*Wilson, John .	
17	Wilson, Richard .	31, Park Row.
35	Wood, Philip T. .	22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah .	29, Meadow Lane.
13	Stratten, Rev. Canon .	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert .	13, St. John's Terrace.
48	Barran, Rowland H. .	Beechwood, Roundhay.
4	Barwick, J. M. .	Low Hall, Yeadon.
5	Bedford, James E., F.G.S. .	Arncliffe, Shireoak Road.
7	Best, Mrs. William W. .	31, Lyddon Terrace.
40	Bodington, Prof. N., Litt.D.	Shireoak Road, Headingley.

8	*Bolland, W. T.	
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George	Wood Lane, Headingley.
72	Brigg, Matthew A.	12, Sholebroke Avenue.
11	Briggs, Riley	Springfield Mount.
75	Brunton, George	Hillary Mount, Woodhouse Lane.
14	Corson, George	Wood Lane, Headingley.
41	Crossley, John Edward	Highfield House, Headingley.
33	Denison, Samuel	32, Clarendon Road.
16	Denny, T. G.	
32	*Dixon, A. S.	
65	Eddison, Octavius, B.A.	St. Helen's, Adel.
20	Eddison, Robert William	The Manor, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William	
69	Fraser, James B.	8, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, nr. Garforth.
25	Goodman, Prof. John	The Yorkshire College.
35	Grahl, Conrad E.	Ashwood, Headingley.
12	Hadow, Reginald T.	
42	Hannam, S. J. W.	44, Bank Street.
27	*Hargrave, John	
60	Harland, J. W.	Headingley.
28	Hepper, John	Clareville, Headingley.
30	Hobson, Alfred	8, Ladywood Villas, Roundhay.
80	*Holmes, Joseph	
81	*Holroyd, James	
31	Illingworth, William	Flower Bank, Burley, Leeds.
6	Jackson, Richard	11, Spring Road, Headingley.
34	Jackson, Rt. Hon. W. L., M.P.	Allerton Hall, Leeds.
67	Jefferson, Robert P.	26, Spencer Place.
63	*Jowitt, Miss E. M.	
38	*Lawson, Thomas	
39	*Lawson, John	

23	Lupton, Arnold .	6, De Grey Road.
44	McCheane, Miss .	Moor Cottage, Adel.
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch (P).	The Hollies, Cliff Road.
9	Mathers, John Shackleton.	Hanover House, Leeds.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	*Morley, R. B. .	
49	*Myers, W. C. .	
50	*Nelson, Henry .	
70	Nelson, James Henry .	Springwell House, Sandal, Wakefield.
58	Nicol, W. H. .	12A, Clarendon Road.
51	*Nunneley, Thomas .	
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Bramley Grange, Thorner.
55	Nussey, Mrs. S. L. .	Potternewton Hall.
56	Nussey, Mrs. Peter .	Springville, Headingley.
43	Powolny, E. Adolph .	Hillary Place.
59	Ramsbotham, S. H., M.D. .	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	*Riley, H. W. .	
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	20, Call Lane.
68	*Smith, William Farrar .	
76	Smithells, Prof. A., B.Sc. .	North Grange Road.
37	Snowdon, Miss .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., M.A.	Rupert Lodge, Grove Road.
77	*Titley, Mrs. Anthony .	
79	Tottie, Mrs. J. W. (P) .	
64	Tweedale, John .	12, South Parade.
82	Walker, H. B. .	
83	Ward, Edmund .	19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S. .	Buckingham Ter., Headingley.

90	Ward, William (P)	12, Bank Street.
3	Webb, William Henry	Aire Street.
47	Whitmell, C. T., M.A., B.Sc.	Invermay, Headingley.
85	Willson, J. J.	Ballamona, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Albrecht, Horace	Springwood Road, Roundhay.
Armistead, Edwin	39, Louis Street.
Atkinson, J. Cecil	Wheatstone, Far Headingley.
Bakewell, William	38, Park Square.
Barran, Alfred	Cumberland Road, Headingley.
Barran, Mrs.	Weetwood.
Bartholomew, W. H., C.E.	Ridge Way House.
Beaumont, Prof. R.	1, Grosvenor Terr., Headingley.
Bedford, Charles S.	Broomleigh, Chapel Lane.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Bompas, His Honour Judge	Headingley.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	Wynneholme, Far Headingley.
Buckley, J. C.	Longfield, Headingley.
Bulmer, George Bertram	Central Bank Chambers.
Burrows, Rev. W. O.	Clergy School, Leeds.
Butler, Edmund	Kirkstall Forge.
Cameron, Dr. Spottiswoode	Ridge Mount, Cliff Road.
Carpenter, T. A.	Moor Cottage, Ilkley.
Carter, J. H.	26, Park Square.
Chorley, R.	Cookridge Street.
Clark, Miss	Potternewton.
Cliff, Walter	Western Flatts, Wortley.
Cohen, Dr. J. B.	15, Regent Park Avenue.
Connal, B. M., M.A.	13, Beech Grove Terrace.
Crampton, W. T.	Parcmont, Roundhay.
Cross, J. R.	Newlaithes Hall, Horsforth.

Croysdale, John	Westfield, Chapel-Allerton.
Dalton, George	Regent Villas, Cumberland Rd.
Dickinson, Brow	Rosemont, Bramley.
Dodgshun, C. C.	Hyde Terrace.
Dodgson, Aquila	Southleigh, Headingley.
Emmerson, Miss	Cromer Hall.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Gardner, Wilson	10, Norwood Terrace, Victoria Road, Headingley.
Gillespie, C. M., M.A.	The Yorkshire College.
Glover, Frederick, M.A.	16, De Grey Road.
Grant, Prof. Arthur J., M.A.	13, Cromer Terrace.
Green, John H.	Horbury, near Wakefield.
Green, William	1, Tanfield Place.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Harper, Alfred	Eccleshill, near Bradford.
Hartley, Prof. R. N., M.B.	38, Cookridge Street.
Hassé, A.	31, Commercial Street.
Hebblethwaite, Rhodes	5, Grosvenor Road, Headingley.
Hellier, J. B., M.D.	1, De Grey Terrace.
Hindle, J. E.	10, Park Row.
Hirsch, Paul	Alma House, Headingley.
Holbrook, W.	St. Ann's Villas, Monkbridge Rd.
Jefferson, Miss M.	4, Woodhouse Square.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Kirk, Albert E.	13, Bond Street.
Kitson, F. J.	Oatlands, Burley, Leeds.
Kitson, Sydney D.	12, East Parade.
Lawson, Arthur T.	Weetwood Grange, Far Headingley.
Lean, W. Scarnell, M.A.	7, Woodsley Terrace.
Littlewood, H., F.R.C.S.	Park Square.

Mackey, W. M., F.C.S.	Victoria Chambers, South Parade.
Megson, Albert	Spencer Place, New Leeds.
Millard, F. H.	52, Cardigan Road.
Moorman, F. W., B.A., Ph.D.	Hollin Lane, Far Headingley.
Mozley, J. R., M.A.	1, Holly Bank, Far Headingley.
Murphy, Albert J.	Preston House, Tonbridge Street.
Naylor, J. W.	Allerton House, Chapeltown.
Newill, Frank	9, Kelso Road.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, John Carr	Moorfield House, Headingley.
Nixon, S. E.	St. Chad's Hill, Far Headingley
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Phillips, John Henry	Hazel House, Methley.
Powell, William	4, Queen Square.
Powell, Miss	Girls' High School, Leeds.
Richardson, W. W.	Cliff Road, Hyde Park.
Robinson, Edmund	42, Park Square.
Rogers, Prof. L. J., M.A., Mus.Bac.	13, Beech Grove Terrace.
Sanders, T. W.	5, Blenheim Square.
Saville, H.	12, Granby Road, Headingley.
Scatcherd, Mrs. Oliver	Morley, near Leeds.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Somers, R. M.	48, Woodhouse Lane.
Sorsbie, Capt. R. F., R.E.	2nd W.Y.R.E. Vol., Claypit Lane.
Stables, Marshall	Hope Villa, Armley.
Stockdale, Mrs. T.	Spring Lea.
Sykes, Arthur	Roundhay Grange.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Taylor, George Stamp	Beeston Hill.
Taylor, Mrs.	Buckingham House, Headingley.
Teale, Lionel H.	North Grange, Headingley.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Tiffany, Frank	3, Kelso Road.

Wager, Harold, F.L.S.	Bank Villa, Stainbeck Lane.
Walker, Arthur T.	The Elms, Weetwood.
Walker, H. Secker, F.R.C.S.	45, Park Square.
Walker, James	Newton Park.
Walker, George	Do.
Ward, Edward, M.A., M.B.	22, Park Place.
West, Lionel F., M.R.C.S.	Morley.
Wilkinson, J. J.	Burnside, Skipton.
Wilkinson, William	Surveyor, Altofts, Normanton.
Willans, J. W.	Mercury Office, Leeds.
Williamson, H. L.	4, St. Chad's Gardens, Far Headingley.
Wilson, D'Arcy B.	Seacroft.
Wilson, J. R. R.	1, St. Mary's Road, Newton Park.
Wood, Thomas	St. Mark's Tce., Woodhouse Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Springwood Road, Roundhay.
Armistead, Mrs.	39, Louis Street, New Leeds.
Barran, Lady	Chapel-Allerton Hall.
Barran, Miss Ruth	Weetwood.
Barran, J. N.	Do.
Beaumont, Mrs. R.	1, Grosvenor Terr., Headingley.
Bedford, Mrs.	Woodhouse Cliff.
Birch, Mrs.	16, De Grey Terrace.
Bompas, Mrs.	Headingley.
Bompas, Miss Ethel	Do.
Bompas, Miss Mary	Do.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	Wynneholme, Far Headingley.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brunton, Miss	Hillary Mount.

Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Cameron, Mrs.	Ridge Mount, Cliff Road.
Carter, Mrs. J. H.	26, Park Square.
Cohen, Mrs. J. B.	15, Regent Park Avenue.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Miss A.	Do.
Crampton, Charles	Do.
Crawford, Mrs. J. W.	Newton Lane.
Cross, Mrs. J. R.	Newlaithes Hall, Horsforth.
Croysdale, Mrs. J.	Westfield, Chapel-Allerton.
Croysdale, Miss	Do. do.
Croysdale, John H.	Do. do.
Dalton, Mrs. G.	Regent Villas, Headingley.
Dodgshun, Mrs. C. C.	22, Springfield Mount.
Foster, Mrs. George	Bleak House, Harehills.
Gardner, Mrs. Wilson	10, Norwood Terr., Headingley.
Glover, Miss Mary	16, De Grey Road.
Green, Miss	1, Tanfield Place.
Green, Miss Ethel	Do.
Hallilay, Mrs.	28 Burley Road.
Hannam, Mrs. W. S.	4, East Parade.
Hebblethwaite, Mrs.	5, Grosvenor Road, Headingley.
Hellier, Mrs.	1, De Grey Terrace.
Hepper, Mrs.	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hirsch, Mrs. Paul	Alma House, Headingley.
Hirsch, Miss	Do.
Hirsch, Miss Theresa	Do.
Holbrook, Mrs.	St. Ann's Villas, Monkbridge Rd.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Miss B.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, Hermann	Do.

Kitson, Mrs. F. J.	Oatlands, Burley, Leeds.
Lean, Miss	7, Woodsley Terrace.
Lupton, Mrs. Arnold	6, De Grey Road.
Mathers, Miss	Hanover House.
Millard, Mrs.	52, Cardigan Road.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Newill, Miss	9, Kelso Road.
Nicholson, Miss	Moorfield House, Headingley.
Nicholson, Wilfred E.	Do. do.
Nixon, Mrs. S. E.	St. Chad's Hill, Far Headingley.
Nussey, Miss	Potternewton Hall.
Nussey, Miss M.	Springville, Shaw Lane.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss Dorothy	Hazel House, Methley.
Phillips, Miss Janet	Do.
Ramsbotham, Miss E. J.	16, Park Place.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	Cliff Road.
Ryder, Miss E. I.	Gledhow Hill.
Ryder, Miss Louisa	Do.
Saville, Miss S. E.	12, Granby Road, Headingley.
Scattergood, Miss	41, Park Square.
Somers, Mrs.	48, Woodhouse Lane.
Stables, Mrs. Marshall	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Miss Enid	Spring Lea, Springfield Mount.
Stockdale, Miss M. B.	Do. do.
Stroud, Mrs. W.	Rupert Lodge, Grove Road.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Taylor, Mrs. G. S.	Beeston Hill.
Taylor, Miss	Do.
Taylor, Miss	Buckingham House, Headingley.

Taylor, T. L.	Buckingham House, Headingley.
Teale, Miss	North Grange, Headingley.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Tiffany, Mrs. Frank	3, Kelso Road.
Tiffany, J. E.	Do.
Wager, Mrs.	Bank Villa, Chapel-Allerton.
Walker, Mrs. A. T.	The Elms, Weetwood.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Warren, Miss	Flower Bank, Burley.
Williamson, Mrs. H. L.	4, St. Chad's Gardens, Far Headingley.
Willson, Miss Emilie Dorothy	Ballamona, Headingley.
Willson, Miss Margaret	Do.
Wood, Miss	St. Mark's Terr., Woodhouse Lane.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

Sir Frederick J. Bramwell, Bart., F.R.S., M.Inst.C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal.

Dr. Day, Mendoza, Argentine Republic.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S.

Wm. Hartley, Durban, Port Natal.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

The Right Hon. Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Sir Clements R. Markham, K.C.B., F.R.S., F.L.S., Pres. R.G.S., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

C. C. Oxley, Minster House, Ripon.

Sir T. Wemyss Reid, LL.D., 26, Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., 19, Gledhow Gardens, London.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

Prof. T. E. Thorpe, D.Sc., Ph.D., F.R.S., Somerset House, London.

Edward Harry Woods, Rosario, Argentine Republic.

JOWETT & SOWRY, Printers & Lithographers, Albion Street, Leeds.

Mch. 7, 1901

79th

LEEDS

Philosophical and Literary Society

THE 80th ANNUAL REPORT

(For 1899-1900)

Sc 4

THE

EIGHTIETH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION 1899-1900.

READ AT THE ANNUAL MEETING, MAY 1st, 1900.

LEEDS:
JOWETT & SOWRY, PRINTERS AND LITHOGRAPHERS, ALBION STREET.
1900.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Curator.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE END OF THE

EIGHTIETH SESSION.

It is gratifying to the Council to record at the end of the Eightieth Session an increase of Subscribers, and an improved attendance at the lectures.

The Members and Subscribers are comprised in the following classes :—

	1899.	1900.
Original Proprietary Members	60	64
New Proprietary Members	79	78
Ordinary Members	2	2
New Ordinary Members	61	59
Annual Subscribers of 21s.	110	118
Annual Subscribers of 7s. 6d.	101	104
	413	425

The thanks of the Society are due to Mr. Thomas Marshall, Mr. H. J. Palmer, the Rev. Charles Hargrove, and Mr. William Hancock for valuable lectures delivered gratuitously during the past Session.

The full Lecture list is as follows:—

1.—"Egypt, from Abraham to Athanasius." By W. M. FLINDERS PETRIE, D.C.L., LL.D., Ph.D. *Oct. 17th, 1899.*

2.—"The Language of Line." By WALTER CRANE, A.R.W.S. *Oct. 24th, 1899.*

3.—"On some recent contributions to our Knowledge of Heredity." By KARL PEARSON, M.A., F.R.S. *Nov. 7th, 1899.*

4.—"The Electrical Fish of the Nile." By FRANCIS GOTCH, M.A., F.R.S. *Nov. 21st, 1899.*

5.—"Homeric Topography: Troy, Mykenæ, Delphi." By THOMAS MARSHALL, M.A. *Dec. 5th, 1899.*

6.—"Sydney Smith as a Yorkshire Country Parson." By H. J. PALMER. *Dec. 19th, 1899.*

7.—"Balzac; ses œuvres et son influence." By H. E. BERTHON, B.A. *Jan. 9th, 1900.*

8.—"The History of Gardens." By A. FORBES SIEVEKING, F.S.A. *Jan. 16th, 1900.*

9.—"Wireless Telegraphy." By OLIVER J. LODGE, D.Sc., LL.D., F.R.S. *Feb. 6th, 1900.*

10.—"The City of Rome: its Rise, its Grandeur, and its Ruin." By the Rev. CHARLES HARGROVE, M.A. *Feb. 20th, 1900.*

11.—"Robert Louis Stevenson." By EDMUND GOSSE, LL.D. *Mar. 6th, 1900.*

12.—"Fiction the highest form of Truth." By I. ZANGWILL, B.A *Mar. 20th, 1900.*

13.—"Travels in Guatimala, Salvador, and Nicaragua." By WILLIAM HANCOCK, F.L.S., F.R.G.S. *April 3rd, 1900.*

Three Museum Lectures were given by the Curator during the Christmas Holidays, illustrated by lantern slides on "Lanuvium, a Buried Roman City;" "The Clerk of the Weather;" and "Some Marvels of Bird Life." The interest in these Lectures is maintained, the average attendance was two hundred, and included many members and subscribers of

the Society. Quite a large number of visitors went carefully over the objects in the Savile and Bird Rooms at the close of the first and third lectures.

The Council note with pleasure the sustained interest in the General Collections in the Museum, by students of Natural History. During the past year the objects have been described to teachers from various parts of West Yorkshire, and more visits have been made by Board School children, under the direction of their teachers, than previously noted. The Buckton Collection of Lepidoptera has been largely referred to by visitors to assist in the classification of Butterflies and Moths.

The Council have from time to time had under consideration the method of display of the collection of coins in the possession of the Society, bequeathed principally by Mr. George Baron, of Drewton Manor, in 1854, and supplemented by gifts and purchases. The Collection consists of Greek, Roman, Mediæval, British, Saxon, and English coins, together with interesting medals, but the Council felt that no method of display would be satisfactory unless accompanied by full references or a catalogue, the preparation of which would require continuous research. It was, therefore, with much pleasure that they accepted the kind offer of Mr. Aquila Dodgson, of Headingley, a member of the Society and a numismatist, to arrange and catalogue the Collection. Under Mr. Dodgson's hands, the Collection has in part undergone a revision and re-arrangement in chronological sequence. This is preparatory to the writing of a catalogue, accompanied by explanatory notes of the principal persons and events depicted on the coinage. A commencement has been made with the Roman issue, that section being the largest and most complete, and it is hoped that there will be ready soon a catalogue of the Early Bronze and Silver Coinage, commonly known as the Family or Consular Coins.

The large Zoological Room has been distempered a lighter colour, and the insides of the wall cases repainted a bluish grey for the better reflecting of the light from the glass roof, and to give higher relief to the objects in the cases.

The gifts of Natural History objects include a mounted specimen of the Capercaillie and eggs of the Emu from Mr. Alfred White, F.Z.S., Leeds; a Demoiselle Crane by Mr. J. W. Marsden, Leeds; and a pair of Eider Ducks by Mr. W. H. St. Quinting, Scampston Hall. The ducks were bred in captivity.

Mr. William Hiscoe has supplemented his last year's gift of coal fossils, from the Brown Metal Beds of the Coal Measures, at Gildersome Tunnel, by a small series of fossils of great interest from the same beds. Another very acceptable addition to the Geological collections is a fine specimen of *Ammonites athleta*, from the Oxford clay, given by Mr. W. G. Fearnsides, of Sidney Sussex College, Cambridge.

To the Ethnological collection have been added a Man-trap, the gift of Mrs. George Roberts, Lofthouse, and two Jujus or fetishes from the Niger Coast Country, presented by Mr. Cuthbert E. Harrison, of the Niger Coast Protectorate.

Mr. Kenneth Teale, New Wortley, Leeds, has given a mahogany dust-proof case, with plate glass sides, for the display of the Golden and Amherst Pheasants in the bird collection. This case has been designed by the donor to demonstrate the possibility of excluding dust from museum cases, even if the buildings be situate in the centre of a city.

The efforts of the Council to improve the ventilation of the Lecture Theatre have continued during the session. The air-ways were thoroughly cleared, and an attempt made to render the existing means of ventilation more efficient. The improvement effected has, however, not been all that was expected, and the Council are persuaded that a radical change

in the system will have to be made, and that considerable expense must be entailed. A comprehensive scheme is now under consideration of the Council.

Some important changes have been made during the past Session in the staff of the Society. Mr. W. F. Husband, LL.B., who has been Secretary of the Society since 1876, has vacated his office in order that he may give his whole time to the greatly increased administrative work of the Yorkshire College. This step was the outcome of a conference between representatives of the Society and the College. The Council desire to record their sense of the able and zealous services rendered to the Society for so long a period by Mr. Husband, who has shewn the most vigilant interest in all that concerned the welfare of the Society.

It is not intended to maintain the office of paid Secretary. The routine secretarial work will in future be carried on by the Curator, and the Honorary Secretaries propose to give more time to the affairs of the Society, in order that the Curator may be able to give undiminished attention to the collections.

The Council are glad to state that the above-named changes have enabled them to make a substantial increase in the salary of the Curator, Mr. Henry Crowther, whose services they have highly appreciated.

The Council deeply regret to have to record the loss by death of two valued colleagues. Mr. Thomas Scattergood died on February 22nd, and Mr. Richard Reynolds on April 5th, 1900.

Mr. Scattergood had been a member of the Council of the Society from 1876. He attended the meetings with great regularity, and showed an unflagging interest in the welfare of the Society. His wise counsel has been of the utmost value to the Society, and his colleagues repeatedly desired

that he would accept some acknowledgment of their esteem by consenting to nomination for the presidency of the Society. Mr. Scattergood, however, preferred to forego this honour. The Council feel that in Mr. Scattergood the Society has lost one of its best friends, and Leeds a citizen whose personal qualities and public services commanded the most sincere respect and admiration.

The connection of Mr. Richard Reynolds with the Society was of the most intimate and important kind. He became a member of the Council in 1865, and held the office of Honorary Secretary from 1870 until 1891. From 1891 he remained an active member of the Council, and indeed within a few days of his death he gave evidence of how sincerely he continued to keep at heart the interests of the Society which he had served so long. It would be difficult to do justice to the value of Mr. Reynolds' services to the Philosophical Society. As Honorary Secretary he gave ungrudgingly of his time and thought to the Society's affairs, and throughout his long connection with them he spared no effort to promote the usefulness and prosperity of the Society and its work. He was himself a diligent meteorological observer, and his registers of sunshine and earth-temperatures, with his own comments upon the results, have long been a feature of our annual reports. Mr. Reynolds' long and valuable services to the Society would have been recognised by his election as President, if his consent could have been obtained.

Both Mr. Scattergood and Mr. Reynolds were active supporters of the Yorkshire College. Together with the late Dr. Heaton and others whose names are still remembered, they maintained that friendly relation between the two institutions which has subsisted ever since the College came into existence.

During the past Session two hon. members of the Society have died—Sir W. Dawson, C.M.G., LL.D., F.R.S., etc., and the Rt. Hon. The Earl of Londesborough.

Sir W. Dawson was emeritus Principal and Chancellor of the McGill University, Montreal, and the most distinguished of Canadian geologists. He was knighted in 1884, when the British Association paid its first visit to Canada. In 1886 he was President of the Birmingham meeting of the British Association. Sir W. Dawson lectured to the Philosophical Society in the Session 1883-4.

The Earl of Londesborough, who died on April 19th, was the second Peer and the first Earl. He was elected an hon. member of the Society in 1864, and was a donor to the Building Fund and to the Museum.

Summary of Meteorological Observations taken at the Philosophical Hall, and at Woodhouse Cliff, Leeds, during the year 1899.

1899.	Mean Height of Barometer (inches).	Mean Temperature of Air (degrees).	Mean Temperature of Earth (degrees).	Amount of Rainfall.	
				Museum (inches).	Woodhouse Cliff (inches).
January	29·54	41·0	40·4	3·38	3·48
February...	29·60	41·3	39·3	1·27	1·48
March	29·78	42·6	39·1	1·04	1·19
April	29·49	45·7	42·6	1·67	1·79
May...	29·75	50·2	47·5	2·87	3·01
June...	29·82	61·9	54·6	1·39	1·44
July	29·81	63·7	57·8	1·47	1·62
August	29·85	64·4	58·0	1·57	1·52
September	29·53	55·4	54·6	3·07	3·21
October	29·79	48·9	47·7	2·15	2·16
November	29·81	48·7	45·8	·89	1·16
December	29·56	37·3	40·8	2·55	2·48
Yearly Means ...	29·69	50·0	47·3	23·32	24·54

EXTREMES FOR THE YEAR.

Greatest Barometric pressure—30·55 inches on November 16th and January 26th, the Temperature of the Mercury being 51° and 38° F.; Least pressure—28·24 on December 29th, the Temperature of the Mercury being 42°.

Greatest degree of Heat, indicated by the Thermometer in the shade—86° on July 30th, 31st, and August 1st; Minimum—21° on December 16th and 28th.

Lowest Earth Temperature was 37·3° on March 26th; the Highest 59·0° on August 4th.

Greatest fall of Rain (during 24 hours)—·98 inches on September 29th. Average yearly Rainfall at the Museum for the ten years 1890—1899, 25·65 inches.

RELATIVE SUNSHINE AT THE URBAN AND RURAL STATIONS, THE MUSEUM AND ADEL.

Deficiency of Museum from Adel:—

1889-90	33·4 per cent.	1895-96	19·3 per cent.
1891-92	30·5 ,,	1897-98	18·7 ,,
1893-94	20·0 ,,	1898-99	17·2 ,,

The adopted Mean Temperature of the Air is the mean of the following four daily readings:—(*a.* and *b.*) Dry Bulb Thermometer read at 10 a.m. and 4 p.m.; (*c.* and *d.*) Maximum and Minimum Thermometers, in a screen.

The Readings of the Earth Thermometer are taken by a Symons' instrument, exposed at a depth of 2 feet 6 inches below the ground at Woodhouse Cliff, and read at 10 a.m. The monthly returns are the means of the daily readings.

The Hall is situated at 1° 32′ 45″ W., and 53° 47′ 51″ N.

The Bench Mark at the corner of the Philosophical Hall is 131·8 feet above sea level, and 10 inches above the pavement. The Cistern of the Barometer is 12·8 feet, the Thermometers are 42 feet, and the Rain-gauge is 45 feet above the Bench Mark.

SUNSHINE AT LEEDS IN 1899.

The observations recorded below were made by Jordan's Photographic Sunshine Recorder at the following stations in Leeds:—

1. The Museum of the Philosophical and Literary Society, situate in the centre of the city; elevation above the sea, 145 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the city; elevation, 330 feet; residential suburb.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the city; elevation, 475 feet; on the fringe of the city.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible Duration.
JANUARY	1	19·40	8·1
	2	30·40	12·7
	3	40·50	16·9
FEBRUARY	1	57·00	21·3
	2	67·30	25·2
	3	79·50	32·3
MARCH	1	123·20	33·9
	2	148·50	40·8
	3	171·35	47·1
APRIL	1	108·45	26·0
	2	122·45	29·3
	3	129·00	30·8
MAY	1	150·15	30·5
	2	174·35	35·4
	3	172·45	35·1
JUNE	1	223·10	44·1
	2	237·50	47·0
	3	244·30	48·3
JULY	1	176·00	34·7
	2	191·00	37·7
	3	192·30	38·0
AUGUST	1	178·40	39·2
	2	218·10	47·9
	3	221·40	49·0
SEPTEMBER	1	134·20	35·9
	2	139·10	36·7
	3	155·50	41·6
OCTOBER	1	87·20	27·2
	2	101·50	31·8
	3	114·40	35·8
NOVEMBER	1	33·40	13·5
	2	35·20	14·1
	3	34·10	13·7
DECEMBER	1	8·30	3·8
	2	16·20	7·3
	3	12·50	5·7

SUMMARY FOR THE YEAR.

	Hours recorded. H.	M.	Difference from mean of ten years in hours. H.	M.	Percentage of possible duration.
Museum ..	1,300	40	+178	41	29·46
Woodhouse Cliff	1,484	00	+169	24	31·35
Lawnswood ..	1,570	10	+131	29	35·57

32·1	per cent. mean for	1899.		29·0	per cent. mean for	1894.
27·8	,, ,,	1898.		31·6	,, ,,	1893.
31·4	,, ,,	1897.		27·5	,, ,,	1892.
26·5	,, ,,	1896.		22·2	,, ,,	1891.
37·5	,, ,,	1895.		24·4	,, ,,	1890.

or 29·0 per cent. mean for ten years.

The Meteorological Office publishes the following Records of Sunshine for 1899, as observed at station taken as representing specified districts:—

Stations.	Number of Hours.	Difference from mean, hours.	Percentage of possible duration.
Scotland, N. (Stornoway, &c.)	1,211	+140	27
,, E. (Aberdeen, Marchmont)	1,340	+ 65	30
,, W. (Glasgow; Douglas, Isle of Man) ..	1,350	+ 8	31
England, N.E. (Durham, York)	1,356	+111	31
,, N.W. (Stonyhurst, Blackpool, Llandudno)	1,666	+262	36
,, Mid. (Cirencester, Oxford, &c.)	1,627	+302	38
,, S. (London, Hastings, Southampton, &c.)	1,983	+355	44
,, E. (Hillington, Geldestone, Cambridge)	1,864	+270	41
,, S.W. (Pembroke, Falmouth, Plymouth, &c.)	1,907	+258	43
Ireland, N. (Armagh, Markree Castle)	1,405	+128	32
,, S. (Dublin, Parsonstown, Valencia) ..	1,611	+168	37
Channel Islands (Jersey)	2,117	+292	50

SUMMARY.

36·6	per cent. mean for	United Kingdom,	1899.	31·1	per cent. mean for	United Kingdom,	1894.
33·5	,, ,,	,,	1898.	37·0	,, ,,	,,	1893.
34·1	,, ,,	,,	1897.	35·2	,, ,,	,,	1892.
31·8	,, ,,	,,	1896.	32·6	,, ,,	,,	1891.
35·8	,, ,,	,,	1895.	30·7	,, ,,	,,	1890.

or 33·84 per cent. mean for ten years.

LIST OF PRESIDENTS

SINCE

THE FOUNDATION OF THE SOCIETY.

1821—5.	JOHN MARSHALL.
1826 & 7.	Rev. W. H. BATHURST, M.A.
1828—30.	MICHAEL THOS. SADLER, M.P.
1831 & 2.	WILLIAM HEY.
1833 & 4.	JAMES WILLIAMSON, M.D.
1835 & 6.	Rev. JOSEPH HOLMES, M.A.
1837—9.	Rev. RICHARD WINTER HAMILTON
1840 & 1.	ADAM HUNTER, M.D.
1842—4.	JOHN HOPE SHAW.
1845—50.	Rev. WILLIAM SINCLAIR, M.A.
1851.	WILLIAM WEST, F.R.S.
1852 & 3.	Rev. CHARLES WICKSTEED, B.D.
1854—6.	JOHN HOPE SHAW.
1857.	JAMES GARTH MARSHALL, F.G.S.
1858.	Rev. W. F. HOOK, D.D.
1859 & 60.	Rev. ALFRED BARRY, M.A.
1861 & 2.	THOS. PRIDGIN TEALE, F.R.S.
1863—5.	Rev. THOS. HINCKS, B.A.
1866 & 7.	CHARLES CHADWICK, M.D.
1868—71.	JOHN DEAKIN HEATON, M.D.
1872 & 3.	Rev. CANON WOODFORD, D.D.
1874 & 5.	J. I. IKIN, F.R.C.S.
1876 & 7.	Rev. J. H. MCCHEANE, M.A.
1878—80.	T. CLIFFORD ALLBUTT, M.D., F.L.S.
1881 & 2.	Rev. JOHN GOTT, D.D.
1883 & 4.	J. E. EDDISON, M.D.
1885.	EDWARD ATKINSON, F.L.S.
1886—8.	THOMAS MARSHALL, M.A.
1889—91.	THOS. PRIDGIN TEALE, M.A., F.R.S.
1892 & 3.	Rev. J. H. D. MATTHEWS, M.A.
1894 & 5.	Rev. CHARLES HARGROVE, M.A.
1896 & 7.	EDMUND WILSON.
1898 & 9.	NATHAN BODINGTON, M.A., Litt.D.
1900.	J. H. WICKSTEED, M.Inst.C.E.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Expenses for the year 1899-1900.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1899		—		1	0	0
,, Annual Subscriptions, viz.:—						
69 New Proprietary Members, at 21s. ...	72	9	0			
2 Original Ordinary ,, 42s. ...	4	4	0			
54 New Ordinary ,, 21s. ...	56	14	0			
118 Annual Subscribers, at 21s.	123	18	0			
104 Annual Subscribers, at 7s. 6d. ...	39	0	0			
Arrears	4	4	0			
				300	9	0
,, Rent, viz.:—						
Cellars	47	10	0			
Lecture Room	196	8	6			
Yorkshire College (Telephone) ...	5	0	0			
				248	18	6
,, Receipts from Visitors to Museum ...				96	5	11
,, Sale of Catalogues	4	0	9			
,, Sale of Electric Transformer	2	0	0			
,, Sundries	2	19	0			
				8	19	9
,, Midland Railway Dividend				54	17	2
,, Sale of Forfeited Share				5	0	0
				£715	10	4

PAYMENTS	£	s.	d.	£	s.	d.
By Balance Due to Bank, May 1st, 1899 ...		—		3	6	1
,, Repairs and Alterations	76	12	11			
,, Taxes	20	13	10			
,, Fire Insurance	12	10	0			
,, Coals, &c.	15	7	10			
,, Gas and Water	12	3	6			
,, Cleaning	8	1	4½			
				145	9	5½
,, Salaries and Wages	303	3	0			
,, Fee to Auditors	2	2	0			
				305	5	0
,, Collections, Library, Scientific Apparatus, and Furniture				44	18	1
,, Postages	10	8	1½			
,, Advertising and Printing	26	17	6			
,, Lectures	118	4	2			
,, Sundries	24	12	4			
				180	2	1½
,, Electric Light Supply	...		...	18	18	0
,, Balance at Bank, 30th April, 1900 ...	14	4	3			
,, Cash in hand, 30th April, 1900 ...	3	7	4			
				17	11	7
				£715	10	4

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

BLEVERS & ADGIE,
CHARTERED ACCOUNTANTS.

LEEDS, *May 12th, 1900.*

Capital Account.

£2,270 Preference 2½ per cent. Midland Railway Stock.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1899-1900.

PUBLICATIONS.

Catalogue of Welwitsch's African Plants, Vol. II., Part I.	The Trustees of the British Museum.
List of the Genera and Species of Blastoidea	
Handbook of the Genera and Species of Birds, Vol. I.	
Curiosities of Light and Sight, by Shelford Bidwell, F.R.S.	The Author.

PERIODICALS.

WEEKLY.

Nature	Purchased.

MONTHLY.

Annals and Magazine of Natural History.....	Purchased.
Geological Magazine	Purchased.
Journal of the Chemical Society	Purchased.
Monthly Notices of the Royal Astronomical Society	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.
Journal of the Linnean Society	Mr. Edward Atkinson, F.L.S.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions	Purchased.
Proceedings of the Royal Society	The Society.
Proceedings of the Royal Institution of Great Britain	The Institution.
Publications of the Ray Society	Purchased.
Fauna Gaskohle, Bd. IV., Heft 2	Purchased.
Students' Flora of New Zealand and the Outlying Islands, by Thos. Kirk, F.L.S.	The Government, New Zealand.
Biological Experimentation, its Function and Limits, by Sir B. W. Richardson, F.R.S.	Presented.
Abridgments of Specifications for Patents, Period 1884—88; 1889—92	The Comptroller-General of Patents.
British Association Report	The Association.
Greenwich Observations	The Astronomer-Royal.
Memoirs of the Royal Astronomical Society	The Society.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Symons's British Rainfall	Purchased.
Monograph of the Palæontographical Society	Purchased.

Proceedings of the Yorkshire Geological and Polytechnic Society.....	The Society.
Transactions of the Leeds Geological Association	The Association.
Leeds Free Library Annual Report. Catalogues:—D. Sociology; K. Science, Art and Technology; O. Geography, Voyages, Travels; M. Biography; B. Natural Science and Medical Works; H. Miscellaneous Literature	The Chief Librarian.
Proceedings of the Liverpool Geological Society.....	The Society.
Journal of the Liverpool Geological Association	The Association.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne.....	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society	The Society.
Transactions of the Leicester Literary and Philosophical Society	The Society.
Report of the Committee of Leicester Town Museum	The Museum.
Report of the Royal Institution, Hull	The Institution.
Report of the Meteorological Department of the Borough of Southport.	The Meteorological Observer.
Report of the Bristol Museum	The Museum Committee.
Report of the Reading Museum	The Free Library and Museum Committee
Annual Report of the Brighton Town Museum	The Museum.
Annual Report, Middlesex Hospital...	The Hospital.
Annual Report of the Birkenhead Literary and Scientific Society	The Society.
Proceedings of the Liverpool Literary and Philosophical Society	The Society.

Annual Report and Proceedings of the Liverpool Science Students' Association	The Association.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society	The Society.
Transactions of the Manchester Geological Society	The Society.
Reports of the Manchester Museum Handbooks do. do.	The Keeper.
Annual Report of the Sheffield Literary and Philosophical Society	The Society.
Annual Report of the Chester Society of Natural Science and Literature	The Society.
Transactions of the Leeds Naturalists' Club and Scientific Association.....	The Association.
Journal of the Royal Institution of Cornwall	The Institution.
Annual Report of the Royal Cornwall Polytechnic Society.....	The Society.
Report of Associated Architectural Societies	The Association.
Journal of the Chester Archæological and Historic Society	The Society.
Geological Record	Purchased.
Transactions of the Yorkshire Naturalists' Union	The Union.
Proceedings of the Royal Society of Edinburgh ..... Transactions do. do.	The Society.
Transactions of the Edinburgh Geological Society.....	The Society.
Proceedings of the Glasgow Philosophical Society	The Society.
Proceedings of the Berwickshire Naturalists' Club	The Club.
Scientific Proceedings of the Royal Dublin Society..... Scientific Transactions do.	The Society.

[illegible] the Royal Irish	The Academy.
[illegible] do.	
[illegible] Geological	The Society.
[illegible] of	The Club.
[illegible] Swedish	The Academy.
[illegible]	The University.
[illegible]	[illegible]
[illegible]	[illegible] Society of [illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Prodromus of the Zoology of Victoria	The Editor.
Records of the Australian Museum Report of the Trustees of the Australian Museum.....	The Trustees.
Proceedings of the Royal Society of Queensland	The Society.
Queensland Agricultural Journal	The Society.
Annals of the Queensland Museum...	The Trustees.
Guide to Queensland	The Government.
Transactions and Proceedings of the New Zealand Institute	The Institute.
Papers and Proceedings of the Royal Society of Tasmania	The Society.
Proceedings and Transactions of the Royal Society of Canada	The Society.
Proceedings of the Canadian Institute Annual Report do. Transactions do.	The Institute.
Proceedings and Transactions of the Nova Scotian Institute of Natural Science	The Institute.
Annual Report, Hamilton Public Library, Ontario, Canada	The Librarian.
Journal and Proceedings of the Hamilton Association	The Association.
Geological and Natural History Survey of Canada ..... Annual Report and Papers—do. ..... Contributions to Canadian Palæontology	Department of the Interior.
Bulletin of the Natural History Society of New Brunswick.....	The Society.
Memorias de la Sociedad Científica (Mexico)	The Society.
" Boletin Mensual " Observatorio Meteorologico-Magnetico Central de Mexico	The Editor.
Annuario del Observations Astrónomico Nacional Mexico.....	The Astronomer.
Boletin del Observatorio Astronómico Nacional de Tacubaya	The Observer.

Transactions of the Royal Irish Academy ..... Proceedings do. do.	The Academy.
Journal of the Royal Geological Society of Ireland	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	The Club.
Publications of the Royal Swedish Academy of Sciences.....	The Academy.
Papers of the Royal University of Norway	The University.
Bulletin of the Geological Institution of the University of Upsala	The Institution.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger.....	Royal Danish Society of Sciences.
Bulletin, Société Impériale, Moscow...	The Society.
"Leopoldina" Amtliches organ der Kaiserlichen, Leopoldino-Carolinischen Deutschen Akademie der Naturforscher	The Academy.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien ...	The Society.
Memoirs of the National Academy of Sciences	The Academy.
Report of Australasian Association for the Advancement of Science.....	The Association.
Journal and Proceedings of the Royal Society of New South Wales	The Society.
Journal of the Royal Geographical Society of Australasia	The Society.
Wealth and Progress of New South Wales	The Agent-General.
Records of the Geological Survey of New South Wales ..... Memoirs of the Geological Survey of New South Wales	The Surveyor.
Annual Report and Papers of the Department of Mines and Agriculture, New South Wales	The Department.

Prodromus of the Zoology of Victoria	The Editor.
Records of the Australian Museum Report of the Trustees of the Australian Museum.....	The Trustees.
Proceedings of the Royal Society of Queensland	The Society.
Queensland Agricultural Journal	The Society.
Annals of the Queensland Museum...	The Trustees.
Guide to Queensland	The Government.
Transactions and Proceedings of the New Zealand Institute	The Institute.
Papers and Proceedings of the Royal Society of Tasmania	The Society.
Proceedings and Transactions of the Royal Society of Canada	The Society.
Proceedings of the Canadian Institute Annual Report do. Transactions do.	The Institute.
Proceedings and Transactions of the Nova Scotian Institute of Natural Science	The Institute.
Annual Report, Hamilton Public Library, Ontario, Canada	The Librarian.
Journal and Proceedings of the Hamilton Association	The Association.
Geological and Natural History Survey of Canada ..... Annual Report and Papers—do. ..... Contributions to Canadian Palæontology	Department of the Interior.
Bulletin of the Natural History Society of New Brunswick.....	The Society.
Memorias de la Sociedad Científica (Mexico)	The Society.
"Boletin Mensual" Observatorio Meteorologico-Magnetico Central de Mexico	The Editor.
Annuario del Observations Astrónomico Nacional Mexico.....	The Astronomer.
Boletin del Observatorio Astronómico Nacional de Tacubaya	The Observer.

Report of the Museum National, Rio-de-Janeiro Archivos do.	Directeur-Général.
Cape Meridian Observations Report of H.M. Astronomer at the Cape of Good Hope to the Secretary of Admiralty	Cape Astronomer-Royal.
Transactions of the American Philosophical Society Proceedings do.	The Society.
United States Geological Survey, Annual Report Contributions to American Ethnology. United States Geographical and Geological Survey	The Department.
United States Department of Agriculture, Publications of Jumping Mice of the Genus *Zapus*	The Department.
Report of the Smithsonian Institution Smithsonian Miscellaneous Collections Smithsonian Contributions Annual Reports of the Bureau of Ethnology Miscellaneous Publications of the Bureau of Ethnology	The Institution.
Proceedings of United States National Museum Report do. do. Bulletins do. do.	The Museum.
Transactions of the Academy of Science of St. Louis	The Academy.
Proceedings of the Academy of Natural Sciences of Philadelphia Papers do. do.	The Academy.
Proceedings of the American Academy of Arts and Sciences	The Academy.
Transactions of the Wisconsin Academy of Sciences, Arts, and Letters	The Academy.
Memoirs of the National Academy of Sciences, Washington	The Academy

Proceedings of the Davenport Academy of Natural Science.....	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia ...	The Institute.
Annual Report, Transactions, and Miscellaneous Papers of the Historical and Scientific Society of Manitoba	The Society.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science	The Union.
Proceedings of the Boston Society of Natural History, U.S.A. ..... Memoirs do.	The Society.
Bulletins of the Essex Institute, U.S.A.	The Institute.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College ..... Annual Report of Harvard College	The College.
Harvard University Catalogue	The University.
Annual Report of the Chicago Academy of Sciences.....	The Academy.
Transactions of the Astronomical Observatory of Yale University ... Annual Report do. Report of the President of Yale University ..... Catalogue do. do.	The University.
Journal of the Elisha Mitchell Scientific Society	The Society.
Tufts College Studies.....	The College.
Transactions of the Meriden Scientific Association	The Association.
Transactions of the Botanical Society of America	The Society.
Bulletins of the Wisconsin Geological and Natural History Society..	The Society.
Botanical Society of America	Society, Cornell University.
Bulletins of the Buffalo Society of Natural Sciences..	The Society.

LIST OF OFFICERS AND COUNCIL,

1900-1901.

OFFICERS.

PRESIDENT	J. H. WICKSTEED, M.Inst.C.E.
VICE-PRESIDENTS. .	NATHAN BODINGTON, Litt.D. ARTHUR SMITHELLS, B.Sc.
HONORARY SECRETARIES .	ARTHUR SMITHELLS, B.Sc. E. K. CLARK, M.A., M.Inst.C.E.
TREASURER	RICHARD WILSON.
HONORARY CURATOR IN GEOLOGY	R. H. KITSON, B.A.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. LOUIS C. MIALL, F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. J. H. D. MATTHEWS, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

JAMES E. BEDFORD, F.G.S.	J. A. NUNNELEY, M.B.
REV. E. C. S. GIBSON, D.D.	HENRY JOHN PALMER.
T. WALTER HARDING.	T. P. TEALE, M.A., F.R.S.
REV. CHAS. HARGROVE, M.A.	J. J. WILLSON.
THOMAS MARSHALL, M.A.	EDMUND WILSON.

Curator . . . HENRY CROWTHER, F.R.M.S.

LIST OF MEMBERS AND SUBSCRIBERS

1900-1901.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

3	Armitage, Robert	Farnley.
4	Arthington, Robert	Glencoe, Teignmouth.
54	Bailey, Benson	14, Kelso Road.
49	Baines, Mrs. Arthur	The Heath, Adel.
5	Baines, Mrs. H. S.	16, Mount Preston.
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, Sir John, Bart.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	*Beckett, W., M.P. (2 shares)	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	*Binks, Benj., Junr.	
45	Braithwaite, James, M.D.	Clarendon Road.
9	*Broadhead, Wm. Henry	
11	*Brown, James	
31, 62	Brown, Wm. J. (2 shares)	Burghwallis Hall, Doncaster.
13, 14	*Calverley, Edmd. (2 shares)	
15	*Charlesworth, C. H.	
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	Greek Street.
26	Cousins, William James	Greek St. Chambers, Park Row
39	Crawford, George Frederic	17, East Parade.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
28	Empson, Christopher	Mill Mount, York.
29, 48	Ford, J. R. (2 shares)	Quarrydene, Weetwood.

72	Gaunt, Leonard .	Hazelbrae, Farsley.
36-8	Gott, Wm. Henry (3 shares)	
61	Greenhow, Wm. T. .	NewtonCottage, Chapel-Allerton
44	Greenwood, Arthur .	8, Cavendish Road.
27	Hall, William .	Hillside, Headingley.
64	Harding, Thomas Walter .	Tower Works, Globe Road.
42	Heaton, Beresford R. .	
30	Horsfall, J., M.A., F.R.C.S.	
47	Ingham, John P. .	14, East Parade.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
43	Lancaster, William Thomas	Yorks. Banking Co. Ltd., Leeds.
55	Luccock, Mrs. .	TheLimes, Kirkstall Lane, Leeds.
34	Lumb, George Denison .	65, Albion Street.
57	Lupton, Charles, M.A. .	The Harehills, Roundhay.
32	Lupton, Edward Basil .	Moorlands, Headingley.
53	Lupton, Francis M., M.A.	Rockland, Newton Park.
56	Lupton, Sydney, M.A. .	102, Park Street, Grosvenor Sq., London, W.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	*Marshall, Arthur, F.G.S. .	
60	*Marshall, John, M.A. .	
66	Marshall, Reginald Dykes	Castlerigg Manor, Keswick.
67	Marshall, V. A. E., B.A. .	Monk Coniston, Ambleside.
50	Mason, Charles Letch .	The Hollies, Cliff Road.
65	Miall, Prof. Louis C., F.R.S.	8, Spring Road, Headingley.
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	Bath.
17	Padgett, Frederick A. .	13, Cookridge Street.
46	Raynar, Joseph Percival .	Moorfield Lodge, Headingley.
70	*Shepherd, John .	
10	Streatfeild, Richard James.	The Rocks, Uckfield, Sussex.
71	Tatham, Miss .	Springfield Mount.
52	*Taylor, Benjamin .	
73	Teale, Lionel H. .	Moorside, Far Headingley.
74	Tottie, Mrs. John William	

35	Truro, The Bishop of .	Trenython, Par Station Cornwall.
75	Walker, Edward .	32, Springfield Mount.
76	Ward, William .	12, Bank Street.
2	Warde-Aldam, W. W. .	Frickley Hall, Doncaster.
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	Denison Hall.
33	Wilson, Henry B. .	Westfield, Armley.
40, 41, 69	Wood, William Hoffman .	Park Square.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S..	Langholme, Franklin Road, Harrogate.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	*Baines, Frederick .	
2	*Balme, E. B. Wheatley, M.A.	
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford .	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	2, East Parade.
4	*Boothroyd, William .	
89	Boston, Richard .	Boar Lane.
10	Bowling, John .	Newstead House, Spencer Place.
49	Braithwaite, William .	Throstle Nest, Horsforth.
5, 6	Brown, G. W. (2 shares) .	78, Belsize Park Gardens, Hampstead, London.
37	Bulmer, Miss .	Blenheim Lodge.
1	Burrell, Benjamin A., F.I.C.	5, Mount Preston.
86	*Carter, J. B. .	
9	*Chadwick, William .	
77	Clark, Edwin Kitson, M.A., F.S.A., M.Inst.C.E. .	9, Hyde Terrace.
14	Conyers, W. H. .	Dunluce, Ben Rhydding.
45	Craven, John .	9, Carlton Grove, Blackman Lane.

104	Crawford, John William .	Newton Lane.
26	Elliot, Douglas .	28, Bond Street.
19	Fairbairn, Sir Andrew .	Askham Grange, near York.
118	Flitch, John R. .	Moortown.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gibson, Rev. E. C. S., D.D.	Leeds Vicarage.
102-3, 106-10, 114-15	Gott, William Henry (P) (9 shares) .	
22	Hargrave, Charles .	
23	*Hargrave, James .	
7	Hargrove, Rev. C., M.A. .	10, De Grey Terrace.
16	Harvey, William .	The Grove, Roundhay.
81	Hatch, S. C. .	
51	Hoggard, Alfred .	25, Cavendish Road.
98	Howgate, William .	21, Blenheim Terrace.
36	*Hudson, Henry .	
84	Hummel, Prof. J. J. .	152, Woodsley Road.
120	Ingham, Samuel .	Headingley Hall.
56	James, Christopher William	Old Manor House, Potternewton.
96	*Jepson, Edward George .	
39	Jowitt, Robert Benson .	Harehills, Leeds.
40	Joy, William Lomas .	Brentwood, Beverley.
43	*Kitson, James .	
46	Kitson, Robert Hawthorn, B.A. .	Elmet Hall, Roundhay.
47	Kitson, Sir Jas., Bart., M.P.	Gledhow Hall.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.
90	Lawson, Frederick W. .	Oaklands, Adel.
50	Leather, Ernest Arthur .	
53	*Lupton, Arthur .	
95	Lupton, Arthur Greenhow	Wellington Street.
8	Lupton, Henry .	Lyndhurst, Headingley.
99	Lupton, Hugh .	Mount Pleasant, Leeds.
55	Lupton, Mrs. John .	Moorlands, Headingley.
21	Lupton, Oliver .	Shireoak Road, Headingley.

63, 100	Lupton, Fras. Martineau, M.A. (P) (2 shares)	Rockland, Newton Park.
88	*McGuire, Thomas	
94	Malcolm, John Cooper	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R.	Regent Villas, Cumberland Road.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D.	Grammar School, Leeds.
27	Maude, William Henry	Middleton Lodge, Leeds.
44	Merry, Mark Fenton	14, St. John's Square, Wakefield.
117	Middleton, Arthur	Calverley Chambers, Victoria Sq.
33	Muir, James	South Haven, Beach Road, Weston-super-Mare.
66	Nicholson, A. H.	
30	Nicholson, Marshall	Middleton Hall, near Leeds.
64	*Nickols, Richard	
67	Nunneley, A. G.	
68	Oxley, James Walker	31, Park Row.
93	Palmer, Henry John, J.P.	55, Albion Street.
28	*Passavant, P. W.	
82	Pearson, John Thomas	The Hall, Melmerby, S.O.
11	Price, Mrs. William N.	Hillary Place.
38	*Ralph, John, M.A.	
34	*Ransome, Prof. Cyril, M.A.	
69	*Reynolds, Richard, F.I.C.	
72	Rider, James	8, Beech Grove Terrace.
18	Robson, A.W. M., F.R.C.S.	Moor Road, Headingley.
105	Ryder, Charles	Gledhow Hill.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	*Scattergood, Thomas	
54	Schüddekopf, Prof. A. W.	7, Springfield Mount.
119	Schunck, John Edward	Potternewton House.
13	Stockdale, Miss Enid	Spring Lea, Springfield Mount.
57	Stringer, John William	Inglebank, Far Headingley.
73	Teale, T. P., M.A., F.R.S.	North Grange, Headingley.
74	Teasdale, Washington, F.R.A.S.	Headingley.

76	*Tennant, Thomas .	
78	*Tetley, F. W. .	
58	Thompson, Chas. F. .	Rowangarth, Ben Rhydding.
79	*Turner, Richard B. .	
80	Wailes, William .	2, Albion Place.
71	Ward, John .	Moor-Allerton House.
111	*Watson, William Henry .	
41	Webb, Joseph S. .	26, Park Row.
97	Weston, Edward .	Newton Park Villa, New Leeds.
42	*Whiting, John .	
83	Wicksteed, J.H., M.Inst.C.E.	Weetwood Croft, Far Headingley.
31	Wilkinson, William M. .	220, Newton Hill.
85	*Wilson, John . .	
17	Wilson, Richard .	31, Park Row.
35	Wood, Philip T. .	

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah .	29, Meadow Lane.
13	Stratten, Rev. Canon .	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert .	13, St. John's Terrace.
48	Barran, Rowland H. .	Beechwood, Roundhay.
4	Barwick, J. M. .	Low Hall, Yeadon.
5	Bedford, James E., F.G.S. .	Arncliffe, Shireoak Road.
40	Bodington, Prof. N., Litt.D.	Shireoak Road, Headingley.
8	*Bolland, W. T. .	
10	Bousfield, Charles Edward	St. Mary's Mount.
7	Branson, F. W., F.I.C. .	Wynneholme, Far Headingley.
15	Bray, George .	Wood Lane, Headingley.
72	Brigg, Matthew A. .	12, Sholebroke Avenue.
11	Briggs, Riley .	Springfield Mount.

75	Brunton, George	Hillary Mount, Woodhouse Lane.
14	Corson, George	Wood Lane, Headingley.
41	Crossley, John Edward	Coppice Drive, Ripon Road, Harrogate.
33	Denison, Samuel	32, Clarendon Road.
16	Denny, T. G.	
32	*Dixon, A. S.	
18	Dodgson, Aquila	Southleigh, Headingley.
65	Eddison, Octavius, B.A.	St. Helen's, Adel.
20	*Eddison, Robert William	
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	*Firth, William	
69	Fraser, James B.	8, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, nr. Garforth.
25	Goodman, Prof. John	The Yorkshire College.
35	Grahl, Conrad E.	3, St. Michael's Road, Headingley.
12	Hadow, Reginald T.	
42	Hannam, S. J. W.	33, Cromer Terrace.
27	*Hargrave, John	
60	Harland, J. W.	Headingley.
78	Hawkesworth, Edwin	Nursery Mount, Hunslet.
28	Hepper, John	Clareville, Headingley.
30	Hobson, Alfred	8, Ladywood Villas, Roundhay.
80	*Holmes, Joseph	
81	*Holroyd, James	
31	Illingworth, William	Flower Bank, Burley, Leeds.
6	Jackson, Richard	11, Spring Road, Headingley.
34	Jackson, Rt. Hon. W. L., M.P.	Allerton Hall, Leeds.
67	Jefferson, Robert P.	8, Carlisle Road, Hove, Brighton.
63	*Jowitt, Miss E. M.	
38	*Lawson, Thomas	
39	*Lawson, John	
23	Lupton, Arnold	6, De Grey Road.
44	McCheane, Miss	Moor Cottage, Adel.
45	March, George	Oaklands, Scarcroft.

61	Mason, Charles Letch (P).	The Hollies, Cliff Road.
9	Mathers, Miss .	17, Wood Lane, Headingley.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	*Morley, R. B. .	
49	*Myers, W. C. .	
50	*Nelson, Henry .	
70	Nelson, James Henry .	Springwell House, Sandal, Wakefield.
58	Nicol, W. H. .	12A, Clarendon Road.
51	*Nunneley, Thomas .	
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Bramley Grange, Thorner.
55	Nussey, Mrs. S. L. .	Potternewton Hall.
56	Nussey, Mrs. Peter .	Springville, Headingley.
43	Powolny, E. Adolph .	Hillary Place.
59	Ramsbotham, S. H., M.D. .	16, Park Place.
17	Redmayne, John .	Grove House, Grosvenor Road.
62	*Riley, H. W. .	
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
19	Simpson, John .	20, Call Lane.
68	*Smith, William Farrar .	
76	Smithells, Prof. A., B.Sc. .	North Grange Road.
37	Snowdon, Miss .	Ridge House, Leeds.
71	Stables, James .	Lane Ends, Horsforth.
1	Stroud, Prof. W., D.Sc., M.A.	Rupert Lodge, Grove Road.
77	*Titley, Anthony .	
79	Tottie, Mrs. J. W. (P) .	
64	Tweedale, John .	12, South Parade.
82	Walker, H. B. .	
83	Ward, Edmund .	19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S. .	Buckingham Ter., Headingley.
90	Ward, William (P) .	12, Bank Street.
3	Webb, William Henry .	Aire Street.
47	Whitmell, C. T., M.A., B.Sc.	Invermay, Headingley.
85	Willson, J. J. .	Ballamona, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Albrecht, Horace	Springwood Road, Roundhay.
Armistead, Edwin	39, Louis Street.
Bakewell, William	38, Park Square.
Barran, Alfred, J.P.	Moor House, Headingley.
Barran, Mrs.	Weetwood.
Bartholomew, W. H., C.E.	Ridge Way House.
Beaumont, Prof. R.	1, Grosvenor Terr., Headingley
Bedford, Charles S.	Broomleigh, Chapel Lane.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Bompas, His Honour Judge	Headingley.
Boyce, Frank	4, Queen Square.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Buckley, J. C.	Longfield, Headingley.
Bulmer, George Bertram	Central Bank Chambers.
Burrows, Rev. W. O.	Clergy School, Leeds.
Butler, Edmund	Kirkstall Forge.
Cameron, Dr. Spottiswoode	Ridge Mount, Cliff Road.
Campbell, Prof. J. R., B.Sc.	Yorkshire College.
Carpenter, T. A.	Moor Cottage, Ilkley.
Carter, J. H.	26, Park Square.
Chadwick, Miss E. M.	Lyndhurst, Dewsbury.
Chorley, H. S.	Burley-in-Wharfedale.
Chorley, R.	Cookridge Street.
Clark, Miss	Potternewton.
Cliff, Walter	Western Flatts, Wortley.
Cohen, Dr. J. B.	15, Regent Park Avenue.
Connal, B. M., M.A.	13, Beech Grove Terrace.
Crampton, W. T.	Parcmont, Roundhay.
Cross, J. R.	Newlaithes Hall, Horsforth.
Croysdale, John	Westfield, Chapel-Allerton.
Dalton, George	Regent Villas, Cumberland Rd.
Dickinson, Brow	Rosemont, Bramley.
Dodgshun, C. C.	Hyde Terrace.

Draper, Rev. W. H., M.A.	The Rectory, Adel.
Eddison, E.	The Manor, Adel.
Elliott, W. J., M.A., B.Sc.	62, Springfield Place.
Emmerson, Miss	Cromer Hall.
England, Charles	45, Reginald Terrace.
Flockton, William	Hopewell House, Oulton.
Foster, George	Bleak House, Harehills.
Gardner, Wilson	10, Norwood Terrace, Victoria Road, Headingley.
Gillespie, C. M., M.A.	The Yorkshire College.
Glover, Frederick, M.A.	16, De Grey Road.
Grant, Prof. Arthur J., M.A.	13, Cromer Terrace.
Green, John H.	Horbury, near Wakefield.
Green, William	1, Tanfield Place.
Hannam, William Simpson	4, East Parade.
Harper, Alfred	Eccleshill, near Bradford.
Hartley, Prof. R. N., M.B.	2, Clarendon Road.
Hassé, A.	31, Commercial Street.
Hellier, J. B., M.D.	1, De Grey Terrace.
Hindle, J. E.	10, Park Row.
Hirsch, Paul	Alma House, Headingley.
Holbrook, W.	St. Ann's Villas, Monkbridge Rd.
Jefferson, Miss M.	4, Woodhouse Square.
Jones, Mrs.	Greek St. Chambers, Park Row.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Keenan, Mrs.	Breakcliffe, Bramley.
Kirk, Albert E.	13, Bond Street.
Kitson, F. J.	Oatlands, Burley, Leeds.
Kitson, Sydney D.	12, East Parade.
Lawson, Arthur T.	Weetwood Grange, Far Headingley.
Lean, W. Scarnell, M.A.	5, Woodsley Terrace.
Littlewood, H., F.R.C.S.	Park Square.
Mackey, W. M., F.C.S.	Victoria Chambers, South Parade
Megson, Albert	Spencer Place, New Leeds.

Millard, F. H.	52, Cardigan Road.
Moorman, F. W., B.A., Ph.D.	Hollin Lane, Far Headingley.
Mozley, J. R., M.A.	1, Holly Bank, Far Headingley.
Murphy, Albert J.	Preston House, Tonbridge Street.
Newill, Frank	9, Kelso Road.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, John Carr	Moorfield House, Headingley.
Nixon, S. E.	St. Chad's Hill, Far Headingley.
Oates, C. G.	Meanwoodside.
Peate, Jonathan	Guiseley.
Pepper, J. E.	42, Hyde Terrace.
Phillips, John Henry	Hazel House, Methley.
Powell, Miss	Girls' High School, Leeds.
Richardson, W. W.	1, Montpellier Terrace.
Robinson, Edmund	42, Park Square.
Rogers, Prof. L. J., M.A., Mus.Bac.	13, Beech Grove Terrace.
Sanders, T. W.	5, Blenheim Square.
Scatcherd, Mrs. Oliver	Morley, near Leeds.
Sherburn, F.	153, Woodhouse Lane.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Smith, H. Archbold	Holly Bank, Far Headingley.
Stables, Marshall	Armley Grange.
Stephenson, George	Yorkshire College, Leeds.
Stockdale, Mrs. T.	Spring Lea.
Sykes, Arthur	Roundhay Grange.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Taylor, Mrs.	Buckingham House, Headingley.
Teale, Michael A.	5, Blenheim Terrace.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Thompson, Vincent T., M.A.	195, Belle Vue Road.
Tiffany, Frank	3, Kelso Road.
Wager, Harold, F.L.S.	Bank Villa, Stainbeck Lane.
Walker, Arthur T.	The Elms, Weetwood.
Walker, H. Secker, F.R.C.S.	45, Park Square.
Walker, James	Newton Park.
Walker, George	Do.

Ward, Edward, M.A., M.B.	22, Park Place.
Ward, J. J.	255, Kirkstall Road.
Welton, Prof. James, M.A.	Yorkshire College.
West, Lionel F., M.R.C.S.	Morley.
Wilkinson, J. J.	Burnside, Skipton.
Wilkinson, William	Surveyor, Altofts, Normanton.
Williamson, H. L.	4, St. Chad's Gardens, Far Headingley.
Wilson, D'Arcy B.	Seacroft.
Wilson, J. R. R.	1, St. Mary's Road, Newton Park.
Wood, Thomas	St. Mark's Tce., Woodhouse Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Mrs. M.	Springwood Road, Roundhay.
Armistead, Mrs.	39, Louis Street, New Leeds.
Barran, Lady	Chapel-Allerton Hall.
Barran, Miss Ruth	Weetwood.
Barran, J. N., B.A.	Do.
Beaumont, Mrs. R.	1, Grosvenor Terr., Headingley.
Bedford, Mrs.	Woodhouse Cliff.
Birch, Mrs.	16, De Grey Terrace.
Bompas, Mrs.	Headingley.
Bompas, Miss Ethel	Do.
Bompas, Miss Gladys	Do.
Bompas, Miss Mary	Do.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	Wynneholme, Far Headingley.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brunton, Miss	Hillary Mount.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Cameron, Mrs.	Ridge Mount, Cliff Road.
Carter, Mrs. J. H.	26, Park Square.

Chadwick, Miss M. L.	Lyndhurst, Dewsbury.
Chorley, Mrs. H. S.	Burley-in-Wharfedale.
Cohen, Mrs. J. B.	15, Regent Park Avenue.
Crampton, Miss	Parcmont, Roundhay.
Crampton, Edward	Do.
Crampton, Charles	Do.
Crawford, Mrs. J. W.	Newton Lane.
Cross, Mrs. J. R.	Newlaithes Hall, Horsforth.
Croysdale, Mrs. J.	Westfield, Chapel-Allerton.
Croysdale, Miss	Do. do.
Croysdale, John H.	Do. do.
Dalton, Mrs. G.	Regent Villas, Headingley.
Dodgshun, Mrs. C. C.	22, Springfield Mount.
Dodgson, Mrs. A.	Southleigh, Headingley.
England, Mrs. Charles	45, Reginald Terrace.
Foster, Mrs. George	Bleak House, Harehills.
Gardner, Mrs. Wilson	10, Norwood Terr., Headingley.
Glover, Miss H.	16, De Grey Road.
Glover, Miss Mary	Do.
Green, Miss	1, Tanfield Place.
Green, Miss Ethel	Do.
Hannam, Mrs. W. S.	4, East Parade.
Hellier, Mrs.	1, De Grey Terrace.
Hepper, Miss M. E.	Clareville, Headingley.
Hirsch, Mrs. Paul	Alma House, Headingley.
Hirsch, Miss	Do.
Holbrook, Mrs.	St. Ann's Villas, Monkbridge Rd.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Miss B.	Do.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Josephy, Miss	Do.
Josephy, Hermann	Do.
Keenan, Miss	Breakcliff, Bramley.
Kitson, Mrs. F. J.	Oatlands, Burley, Leeds.
Lane, Miss	Girls' High School, Leeds.
Lupton, Mrs. Arnold	6, De Grey Road.

Mathers, Miss	Hanover House.
Millard, Mrs.	52, Cardigan Road.
Moorman, Mrs.	Hollin Lane, Far Headingley.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Newill, Miss	9, Kelso Road.
Nicholson, Miss	Moorfield House, Headingley.
Nicholson, Wilfred E.	Do. do.
Nixon, Mrs. S. E.	St. Chad's Hill, Far Headingley.
Nussey, Miss	Potternewton Hall.
Nussey, Miss E.	Springville, Shaw Lane.
Nussey, Miss M.	Do.
Pepper, Mrs. J. E.	42, Hyde Terrace.
Phillips, Miss Dorothy	Hazel House, Methley.
Phillips, Miss Janet	Do.
Porter, Miss	Flower Bank, Burley.
Ramsbotham, Miss E. J.	16, Park Place.
Redmayne, Mrs. John	Grove House, Headingley.
Richardson, Mrs.	1, Montpellier Terrace.
Ryder, Miss E. I.	Gledhow Hill.
Ryder, Miss Louisa	Do.
Scattergood, Miss	41, Park Square.
Smith, Mrs. H. Archbold	Holly Bank, Far Headingley.
Stables, Mrs. Marshall	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Miss M. B.	Spring Lea, Springfield Mount.
Stroud, Mrs. W.	Rupert Lodge, Grove Road.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Taylor, Miss	Buckingham House, Headingley
Taylor, T. L.	Do. do.
Teale, Miss	North Grange, Headingley.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Tiffany, Mrs. Frank	3, Kelso Road.

Wager, Mrs.	Bank Villa, Chapel-Allerton.
Walker, Mrs. A. T.	The Elms, Weetwood.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Webb, Miss	Aire Street.
Williamson, Mrs. H. L.	4, St. Chad's Gardens, Far Headingley.
Willson, Miss Emilie Dorothy	Ballamona, Headingley.
Willson, Miss Margaret	Do.
Wilson, Mrs.	1, St. Mary's Road, Newton Park.
Wood, Miss	St. Mark's Terr., Woodhouse Lane

Members and Subscribers are requested to inform the Curator of any errors that may be found in the above list.

HONORARY MEMBERS.

Professor T. Clifford Allbutt, M.D., F.R.S., Cambridge.

The Right Rev. Bishop Barry, D.D., Canon of Windsor, Windsor.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

Sir Frederick J. Bramwell, Bart., F.R.S., M.Inst.C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo.

Dr. Day, Mendoza, Argentine Republic.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hancock, F.L.S., F.R.G.S., c/o Commissioner of Customs, Kowloon, Hong Kong, China.

Wm. Hartley, Durban, Port Natal.

Capt. James Holt, A.D.C., Government House, Wellington, New Zealand.

The Right Hon. Lord Avebury, D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Sir Clements R. Markham, K.C.B., F.R.S., F.L.S., Pres. R.G.S., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c., The Grange, Totteridge, Hertfordshire.

C. C. Oxley, Minster House, Ripon.

Sir T. Wemyss Reid, LL.D., 26, Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. A. W. Rücker, M.A., F.R.S., 19, Gledhow Gardens, London.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

Prof. T. E. Thorpe, C.B., D.Sc., Ph.D., F.R.S., Somerset House, London.

Edward Harry Woods, Rosario, Argentine Republic.

JOWETT & SOWRY, Printers & Lithographers, Albion Street, Leeds.

This book should be returned to the Library on or before the last date stamped below.

A fine of five cents a day is incurred by retaining it beyond the specified time.

Please return promptly.

LIB

No bool
record of t
No pers
umes at
Council.
Books t
without re
twice.
A fine o
returned w
The Lib
the expirat

Certain books, so designated, cannot be taken from the Library without special permission.

All books must be returned at least two weeks previous to the Annual Meeting.

Persons are responsible for all injury or loss of books charged to their name.

Widener Library
3 2044 092 623 420